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1. Essays English

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ESSAYS AND ADDRESSES

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ESSAYS AND ADDRESSES

BY THE LATE

JOHN HENRY BRIDGES, M.B., F.R.C.P.

SOMETIME FELLOW OF ORIEL COLLEGE, OXFORD

LATE MEDICAL METROPOLITAN INSPECTOR TO THE LOCAL GOVERNMENT BOARD

WITH AN INTRODUCTION BY

FREDERIC HARRISON

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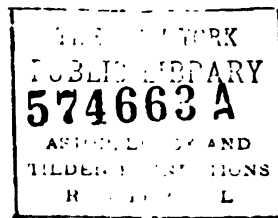
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EDITOR'S NOTE

OF the papers here collected some have already been printed in one form or another. "Prayer and Work," "Religion and Progress," "Man the Creature of Humanity," and "Calderon," were included in the *Discourses on Positive Religion* (2nd ed., 1891). We have to thank Messrs. Macmillan for permission to include "Harvey and His Successors," which was delivered as the Harveian Oration before the Royal College of Physicians; and the Council of the Sociological Society for permission to reprint "Some Guiding Principles of the Philosophy of History," from *Sociological Papers*, vol. ii. The remaining papers were written out for use in lecturing, and were not revised by the author for publication. They are printed here precisely as they stand, with no alterations, except of a very few slips of the pen. Some of them are portions only of lectures, the remainder existing only in the form of rough notes. But in all cases they appear sufficiently complete in themselves to be printed as they stand.

L. T. HOBHOUSE.

April, 1907.



INTRODUCTION

BY FREDERIC HARRISON

ALTHOUGH the life of Dr. Bridges was absorbed in active work, first as a Physician to a hospital, then as Inspector under the Government, as a zealous apostle of sanitation, and finally as systematic teacher and preacher, he found time to produce a large amount of literary achievements. The extent and variety of this is only known to his friends and colleagues ; but it is really extraordinary for one who was a practical worker and would entirely disclaim the character of being a mere student or a man of letters. The present volume contains a selection of some of his occasional pieces of permanent value and solid learning.

His more important works were these: (1) The translation, and editing with analyses, of the first volume of Comte's *Politique Positive*—in its English form (1875), a bulky octavo of 678 pages. This contains the *General View, Cosmology, Mathematics, Astronomy, Physics, Chemistry, and Biology*—and could not have been accomplished by any one without a general training in the sciences as well as philosophy. (2) He devoted many years of his life to editing the *Opus Majus* of Roger Bacon, 3 vols. 8vo. (1897-1900). (3) His *Richelieu and Colbert* (1866) obtained the enthusiastic praise of J. Cotter Morison, and was worthy of such commendation. (4) *The Unity of Comte's Life and Doctrine*, addressed to J. Stuart Mill

(1866), was a complete refutation of the criticism made by Mill in his volume on *Positivism*. (5) To the *New Calendar of Great Men* (1892) Dr. Bridges contributed 194 *Biographies* of philosophers, men of science, and poets.

To various publications he contributed the following studies: to the Oxford Essays, 1857, *The Jews in Europe in the Middle Ages*; to *International Policy*, 1866, the essay on *China*; to the *Fortnightly Review*, between 1869 and 1881, seven different articles; to the *Revue Occidentale* (in French) thirteen articles; to the *Sociological Society*, three papers (1905-6). For the *Positivist Review*, between 1893 and 1907, he wrote no less than one hundred papers, and to the Positivist Society he gave an immense series of addresses from 1879 to 1906.

A literary product so large, extending over exactly fifty years, from 1857 to 1907, including posthumous papers, and ranging in subject from the *Jews in the Middle Ages* to the *Taxation of Suburban Land*, from *Calderon* to *Herbert Spencer*, from *Moses* to *Charles Darwin*, was in no way either miscellaneous or discontinuous, neither superficial nor literary. It was all infused into organic unity by that potent instrument of Synthesis—the co-ordination of human life and thought in all its phases by devotion to the development of Humanity under the inspiration of a scientific philosophy of Nature and Man.

To this dominant ideal John Bridges over fifty years, 1856-1906, consecrated every hour of his life and every energy of his mind. Of all the colleagues with whom he worked and taught during this period, he was far the first to master the encyclopædic system of Auguste Comte, as he was the one who had most truly and thoroughly absorbed it in conception and in practice. Under a really scientific synthesis, thus absorbed by a fully competent mind, over

a long course of years of study and experience, things apparently disparate fall into their proper correlation, and ideas of abstract science join forces with poetic imagination and the conduct of practical life. Bridges was fond of dilating on the infinitely subtle meanings of the verse in which Comte expressed his co-ordination of the three human forces—Thought, Feeling, Activity:

"Agir par affection et penser pour agir."

(Affection prompts the act which thought must guide.)

The general works of John Bridges and the story of his indefatigable life must be left for the future. The present volume aims only at collecting some typical examples of his philosophical and literary labours.

The five essays in Part I. give an adequate sketch of the Positivist scheme as a working propaganda. The general Synthesis, or animating idea, runs through all of them. But they illustrate various parts of the doctrine in practical application to life. Their special subjects are: Worship or Prayer—Faith in a Positive Creed—Love as the moving force in human Nature—The evolution and influence of the Past—The meaning and power over man of Humanity as the collective spirit of the Past, the Present, and the Future.

The first address, entitled "Prayer and Work," has peculiar interests for all associated with the Positivist movement. It was delivered on the Day of Humanity, January 1, 1879, and was the first of the series of annual addresses which have now been publicly given on New Year's Day by the same body without a break for twenty-eight years. It gave the key-note of these addresses, and was delivered when Dr. Bridges was the first President of the English Positivist Committee formed by M. Pierre Laffitte in 1878. It became the type which has been

mainly followed ever since. It opens with an Exhortation to bear in memory the great phases of civilization and the heroes and martyrs of its long evolution. Such an Exhortation takes the place of Invocations to supernatural Powers and Supplications to obtain personal blessings.

Thence the preacher passes to Prayer. "To pray is to form the ideal of our life, by entering into communion with the Highest." But this communion cannot be attained by dwelling in thought on an invisible ideal, unless it be trained and supported by habitual union with beings nearer and dearer to us in daily life. Nor can it end in mere feeling without sinking into mysticism or into routine. *Prayer and Work*—Desire united with Effort—is the essence of all true religion. Positivism is "Catholicism become scientific." Religion does not consist in the repetition of formulas and of rites. Religion is the devotion of heart, mind, and will to the service of humanity. Goodness, justice, truthfulness, and purity do not rest on any mysterious revelation, but on laws of nature which all men may be taught to recognize and to submit to in their lives.

The second essay, "Religion and Progress," was also given in 1879 as an address when Bridges was President of the new Positivist Committee. It was devoted to explain the apparent paradox—but profound truth—of a favourite maxim of Comte's—*Man becomes more and more religious*. Starting with a sympathetic extract from Cardinal Newman, Bridges insists on the indispensable necessity for a solid doctrine as the basis of all religion—an idea which Neo-Christianity in all its phases is now quite ready to throw aside. Then he shows that, with the incessant march of modern science and scientific thought, there can be no hope of stability in any doctrine which has not science in all its aspects for its foundation. There can be no peace or

confidence in any religion which is liable to be continually displaced by demonstrable certainties.

From this basis, Bridges unfolds Comte's scheme of a religion of Humanity, entirely based as its creed on certainties, and aiming in all its purposes and institutions at human improvement and the development of human well-being on earth, as destined to give an immense enlargement to religion. Far from destroying or sterilizing religion, as was vainly imputed to him, Comte would open to religion worlds of feeling, thought, and activity undreamt of yet by any Saint or Pontiff, even if it had been dimly foreshadowed by the hysterical mysticism of some saintly hermit in his cell. The cramping and withering of religion in our age is due to the obsolete perversity of theologians who continue to restrain the meaning and aim of religion to supermundane visions, which are utterly remote from the actual world of modern men, and have no relation to what reasonable men think and know, or to what good men and women love and desire.

The third essay, "Man the Creature of Humanity," was an address given at Newton Hall in the first year of its tenure by the Positivist Society (1881); and it is a *résumé* of the Positivist conception of Humanity as a source and centre of Religion. It opens with the first paragraph of Comte's *Synthèse Subjective*, which Bridges truly says contains "the whole essence of Comte's teaching." It may be worth while to repeat the first sentence of four lines—but thirty words in French—a striking example of Comte's closely knit and profound aphorisms. "The subordination of Progress to Order, of Analysis to Synthesis, of Self-love to Love of Others; these are the three modes, practical, theoretical, and ethical, of describing the problem of man's life, the attainment of complete and lasting unity." As

Bridges says, rightly to understand this intricate sentence "would ask the study of a lifetime."

But nothing can be more effective than Bridges' exposition of the relation of mathematics to morals, of the relation of broad or narrow views of science to social affection or to self-love. Yet the whole aim of Positivism is to show the concatenation of abstract thought to moral conduct, the sequence of philosophic breadth to practical altruism. The key of the mystery is found in Humanity, wherein all modes of thought, of feeling, and of life, find at once their inspiration and their purpose.

The whole of this essay is a typical example of the singular power of the conception of Humanity as understood by Positivism, to correlate the most dissimilar ideas and to illustrate the most diverse facts. Wordsworth's *Excursion*, Watts' steam-engine, Goethe's poems, Burns' *Daisy*, the Irish Incumbered Estates Act, mediæval and Oriental monasticism, Paul's *Epistle to the Romans*, Dante's *Paradise*, Communism, the Decalogue of Moses, the Virgin Mother, the Iliad, the basis of ethics, the mariner's sextant, the battle of Salamis, Wagner's operas, and Calderon's *Autos Sacramentales*—all in turn join in expounding the infinite sources of Humanity—the Power of whom only we can say, *nihil a se alienum*.

The address on "Love the Principle" (October, 1888) is perhaps of all pieces in this volume the one which will cause the greatest surprise to those who know nothing of Positivism, and yet is the piece which is the most redolent of Bridges' spiritual attitude. There are whole passages in it which Cardinal Newman might have penned, and which do not fall below his high-water mark of veneration for early Catholicism and his fervour to arouse devoutness of heart. Yet withal no Agnostic could more unsparingly denounce

the radical failure of Catholicism to accomplish its mission and the degradation of the Christian Church when it sank "to the bedimmed folly" of declaring in the Church Article that all works done before the grace of Christ are evil and of the nature of sin. Nor could any Darwinian insist more earnestly on the universal law of evolution. It is the union of devotional zeal with scientific reality that makes the force and the fascination of the Positivist Synthesis. And it is especially in such a part as this that Bridges' best work was done.

This treatise on "Love" depends on a different understanding of the term than that we find in Plato's *Phædrus*, or in St. Bernard's *De Amore Dei*—and yet it combines something of both. In unfolding all the connotations of the central maxim of the religion of Humanity—*Love as the Principle*—Bridges traces in turn all the sides of this ancient, world-wide, human conception from the lowest to the highest, showing it to be *real*, that is, innate in human nature ; *useful*, as was said, *omnia vincit amor*, for friendship, loyalty, patriotism, are but some of its forms ; *certain*, *precise*, definite, as every scientific demonstration is bound to be. Finally, Love is obviously and necessarily *relative*, *organic*, *sympathetic*. Now, these seven connotations are all involved in the dominant term, *Positive*.

The paper on the "Philosophy of History," read before the Sociological Society in 1905, is a study of the place of History in the science of Sociology, and the conditions and limits of scientific history. It in no way undervalues the necessity for specialist research ; but it insists on the need for a dominant conception of general history to give coherence and sequence to the special history of periods, nations, and institutions. And this involves not merely a scheme of general history as a record of facts, but a

scientific outline of the evolution of human society. The paper shows how largely this conception of human evolution has been developed by modern research in the Oriental nations and in the lowest fetichist races since the time of Comte: yet, withal, how recent studies in the last fifty years have given life and meaning to Comte's profound generalizations.

The rest of this paper is mainly devoted to expounding the law of human progress as the passage from the primitive Theocracy we now find dominant in Asia long ages before Moses through a series of stages down to the Sociocracy, or the ordering of society in the light of scientific canons of social morality, which we may distinctly note for the last hundred years as being in advancing ascendancy in Europe. The essence of the argument lies in the ingenious and novel attempt to trace a law of progress in the absorption into the Roman Empire of the discordant activities of the scattered Hellenic republics, in the dissolution of Roman imperialism into a new Feudal and Catholic West. Hellenists, Professors of Roman law, and enthusiasts of Romantic or Christian mediævalism, are not to be easily convinced that an intelligible stream of progress can be shown in the long, broken, stormy course of evolution from Solon and Thales to the nineteenth century of Cavour and Darwin. But a true philosophy of History can trace a real and consistent sequence.

In passing to the second part of this volume—estimates of the great thinkers and poets—we leave the more formal exposition of Positive doctrine for the life-work of foremost men and general surveys of the philosophy and the literature of their epochs—ancient, mediæval, and modern. Each of the five essays bears the name of some illustrious writer in science, poetry, and letters; but it is a striking feature in

Bridges' biographies of men, that they appear as types and representatives of those movements out of which they arose and which they largely developed. These are not detached biographies of famous individuals: they are *aperçus* of the great ages of new light and the progress of ideas.

It is the distinctive note of Bridges' mind, as it is of the Positive Philosophy, to look on intellectual progress in its entirety, and to see it in the interaction of all its sides and its reaction on all parts of human life. This is "seeing life whole," as we are told to do. Accordingly, these six names range from the views of Greek geometers in the sixth century B.C., to Diderot at the close of the eighteenth century A.D.—from geometry and eclipses of the sun to the French theatre and the Encyclopædia of D'Alembert and his friends. The chosen types open with Thales to remind us of Comte's incessant appeals to base all systematic thought on mathematics. As Plato said, "Let no man enter if ignorant of geometry." This cardinal truth of Positivism is one which Bridges is especially keen to inculcate.

The essay on Roger Bacon—an address given at Oxford in 1903—sums up the essential results of Bridges' long study of the great Franciscan thinker to whom he devoted some of the best years of his life, even going to Rome to consult the manuscript in the Vatican. It is, indeed, much more than an essay on Bacon. It is an illuminating study of the whole course of mediæval thought, especially interesting by the light it throws on the incalculable importance to European and Christian thought of the Arabian and Mussulman learning—without which it is hard to see how the filiation of Greek science could have been recovered in the Middle Ages amid the destructive fanaticism of Catholic theology. But for the Arabs of Baghdad and

Cordova, Aristotle might have suffered the fate of Sapho. As we read the story of Bacon's marvellous genius and prophetic intuitions of the science to come, we see him as a man in advance of his age by five—we may almost say six—centuries. And one wonders if we are right in putting Francis on a pedestal higher than that occupied by Roger. But the Chancellor had great predecessors and great contemporaries—the Monk had none akin to his own mind. What was utterly premature to Roger, was fully ripe to Francis Bacon.

When the Harveian oration was offered to Bridges by Sir Andrew Clark, the President of the Royal College of Physicians, it was a happy inspiration which reflected honour both on Bridges and the learned Society which chose him for the task. As one of those who was present, I can bear witness to the success of the lecture and the emphatic welcome it received from those who heard it.

The fragment on Dante, brief as it is, does full justice to one who, in a special sense, must always be the poet of the religion of Humanity. No adept of the Dantesque school could feel that any side of his teaching has been here underrated. And all students of Dante will be interested in Bridges' mode of dealing with the vexed problem. Was Dante a sincere Catholic or a conscious sceptic and reformer? The answer given is, that Dante was long absorbed in free criticism of the Church, but at the close of his life he felt himself to be in sincere communion with the Catholic institutions, if not in humble acceptance of the Catholic Creed. But Bridges goes on to show that what a man thinks he believes is not always the same thing as the real effect of his thoughts. And in this sense, although Dante is truly "the voice of ten silent centuries," and idealizes the inmost spirit of Catholicism from

Augustine downwards, he belongs in imagination quite as truly to the six centuries of modern progress and free thought. Nay, indeed, Dante has only just begun to be understood in all his spiritual depths, and the religion of Humanity alone can supply the key to unlock the subtle convolutions of mystic meaning wherein the secret of the *Paradiso* has been so long enshrined.

The essay on Calderon is a model of deep and informing judgment on one of the great poets of the world such as we rarely get even from the most subtle of literary critics. It is not merely a study of the Shakespeare of Spain, but it is a revelation of the spirit of Spain itself, the only possible apology of the Spanish Church, a lesson to Protestant England of the nineteenth century on the religious meaning of the mediæval drama. Cultivated men and women to-day are willing to admit the genius of Calderon: but how few of them know him otherwise than in the isolated fragment of Shelley, the ingenious fantasias of FitzGerald, and it may be a play or two from McCarthy! John Bridges read Calderon for himself in the original. In his long life of eighty years Calderon wrote more than two hundred dramas, besides minor interludes. For the last thirty years of his life he devoted himself almost entirely to his *Sacramental Acts*—Miracle Plays in honour of the Sacrament.

I know no one who has traced the origin, aim, and devotional reaction of these *Autos Sacramentales* so well as we find it in the pages of his essay. "The occasion, the subject, the place, the audience, the style, the mode of construction, were all different from those of other dramas." It is a form of art most alien to everything we conceive of the stage; one particularly hard for the England of to-day to understand. Bridges put it to us in clear form, because

he unveils to us, with historical and sociological insight, the innate character of the mixed Iberian nature, and the indomitable traditions of which the Spanish religion and drama were the popular expression. In doing this, he gives an admirable analysis of the spiritual contrasts between mediæval Catholicism and modern Protestantism. From first to last, the Spanish drama during the hundred years of its great age (1580-1680) was entirely a religious institution, had religious ideals as its inspiration, and was composed by men who, like Calderon, ultimately entered priestly orders. "His work was the portraiture of the manners and the passions of a Catholic and Feudal people."

The conjunction in a single lecture of Corneille with Diderot—of the severe, heroic, Catholic poet of the monarchy with the audacious, bohemian, anti-Christian philosopher of the revolution—is a *tour de force*, highly characteristic of Bridges' mind, a paradox only to be solved by Positivist ideas. Corneille and Diderot in the Positivist Calendar hold corresponding places under Shakespeare and Descartes respectively, each representing an influence on the evolution of Humanity—the one of noble Art, the other of clear Thought. For all his Catholic creed, Corneille idealizes human (not clerical) morality. And Diderot, for all his restless diversity of genius, is the most synthetic of all the revolutionary spirits. Bridges' analysis of the grand ethical motives of Corneille may read many a lesson to our age, which can endure on the stage nothing but Elizabethan fantasias and psychologic problems. I know no critic who has unfolded the moral and spiritual meaning of Corneille's *Polyeucte* as we find it explained in this essay.

We are all so familiar with the marvellous activities of Voltaire, whose name just now is receiving a new apotheosis,

that it may surprise some readers to find Diderot assigned as the really creative mind of the eighteenth century. If Voltaire did the principal work of analysis and destruction, it was Diderot who laid the germ of the constructive New Age of which we see as yet little more than the ground plan. The fact is that, scattered through the diversified products of Diderot's encyclopædic mind, we find one after another the germs of the positive conceptions of Nature and of Man, which Auguste Comte cast into a system. More than any of the thinkers of the eighteenth century, Diderot had conceptions of philosophy from the relative, not the absolute point of view, of an anthropocentric world displacing an immeasurable and incomprehensible universe. The Encyclopædia, with all its faults and its weaknesses, was an adumbration of the concentration of thought, science, and zeal on the practical realization of human well-being on earth.

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PART I
ESSAYS IN POSITIVIST
DOCTRINE

I

PRAYER AND WORK *

I

WE meet here to-day to celebrate the festival of Humanity. By thought and by feeling we seek to enter into the presence of that assemblage of noble lives, who, from the earliest ages until now, have laboured for the benefit of men, and have left a store of material and spiritual good from which all the blessings of our present life have issued. Before the resistless power of this unseen host we bow in thankful submission ; knowing well that of ourselves we are insufficient, either to see or to do what is right. Whatever wider thoughts or generous impulses prompt us to rise above ourselves, and to live unselfishly, come to us from a higher source. They are the free gift of Humanity.

We commemorate, therefore, with thankful hearts, the service rendered by the countless generations of men, from the earliest ages till now, who lived and died unknown, but whose labours are our inheritance ; the love that bound them to a common hearth ; the loyalty that knit them together in danger ; the gentle courage that brought the higher animal races into friendly service ; the subtlety of hand and eye that mastered the first arts of peaceful union ; the simple beliefs that fostered the first germs of

* This address was delivered January 1st, 1879.

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reverence ; for these things are at the root of human progress ; the starting-point in the struggle upwards to a higher life.

We commemorate the service of those wise leaders of men, whether in Egypt, India, or Judea, who saved men's lives from the waste of deadly strife, by laying down the first rules for their guidance ; to whom it is due that reverence for parents, inviolability of marriage, respect for life, and truthful intercourse between man and man, have been clothed with a vesture of sanctity that has endured through ages.

We commemorate the nation whose great men, bursting through the oppressive bonds of theocratic dominion, sought to idealize and to enlighten human life, by art founded on reality, and by discovery of the laws of nature ; and chief among these we speak of Homer and of Æschylus, of Thales, Pythagoras, Aristotle, and Archimedes.

We commemorate the Roman State, eternal type of heroic endurance sustained through centuries, using the arts of conquest and of government for the establishment of a peaceful dominion, from which the commonwealth of Western States has sprung. And from the long roll of her great names we take the three greatest ; Scipio, Cæsar, Trajan.

We commemorate the Catholic Church founded by St. Paul, and built up of the holy lives of countless men and women who, seeking to deny themselves and to purify their lives from every selfish thought, became a leavening influence in the world around them, a spiritual power not resting on the force of armies and the ordinances of magistrates, but on the inward force of conscience.

We commemorate the mediæval rulers, Charlemagne,

Alfred, or Godfrey, who, uniting Roman energy with Christian faith, created in chivalry the new ideal of manhood, the loyal sense of honour, the reverent protection of weakness ; and who saved the Western world from the barbaric floods that threatened to overwhelm it.

We commemorate the birth of civic-industry, purified henceforth for ever from the stain of slavery, gaining, under the guidance of Gutenberg, Watt, and countless others, mastery over the forces of our planet, and thus, when wisely directed to its true social purpose, setting human energies free for higher aims. We celebrate the poets, painters, and musicians of modern Europe, Dante, Raphael, Shakespeare, and Mozart, who, amidst the inevitable decay of religious faith, have kept alive the flame of ideal sympathy, and have saved us from the death of sordid vulgarity or acrid political agitation ; the audacious spirit of Descartes, of Bacon, and the other lamps of modern philosophy, who swept away the fictions that stifled the growth of thought, and concentrated intellectual force on the ennoblement of human life by prescient submission to the order of nature ; the vigorous statesmen, William, Cromwell, Frederic, whose firm government was the surest defence of free thought against corrupt and retrograde superstition ; and, finally, the men of special science, of whom Kepler, Newton, and Bichat are worthy to be the types, who, availing themselves of the freedom thus secured, and of the methods of research thus opened to them, unfolded to us, each in his own sphere, the laws of the material world around us, and of vegetable and animal life.

The lives and works of all these men seem to us to find their central meeting-point in the founder of the Religion of Humanity, who first revealed to us how,

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unknown to themselves, they worked together towards a common purpose ; and who, by establishing the spiritual truths of man's nature, so long contested by revolutionary scepticism, upon the sure basis of science, has been the restorer of true religious conviction to mankind.

With these greater names we join the multitude whom no man can number of beautiful and self-denying lives of whom no record is left, but who have none the less continued to live from generation to generation in those whom their purity and their strength inspired.

With the strength given by this communion with the past, we desire to join our own measure of service in sympathy with men and women of all creeds and countries who strive to live rightly, in sympathy yet more close for those who cling with noble hopes to the religious faith which we have left, or with those who having left it, in ardour for true progress, have found as yet no stable foundation for their action ; in fellowship of a more special kind with those of our faith, in Paris, in London, in Ireland, and in other lands, who look forward amidst the turmoil and discouragement around them, to the sure hope of a more blessed future, for the full attainment of which it is none the less our highest happiness to work that our own eyes will not behold it. That in this cause our zeal may continue so long as life shall last, and may spread from us to others who, entering into our labours with firmer courage and wider insight, shall bring them to a good result, is our earnest prayer.

II.

The time has now come for each one of us to examine very thoroughly the position which he holds ; to sound its

foundations ; to test the superstructure. Each one of us has now to ask himself, how far the faith which he professes is in any true sense a religion to him ; how far it enables him to pray. I use that old word because there is absolutely no other that expresses the facts of the case so simply. After every wish that the laws of nature may be suspended for our individual benefit has been unflinchingly set aside, the final meaning of the word remains ; rather, it appears for the first time in all its purity. To pray is to form the ideal of our life, by entering into communion with the Highest.

The faith of the Mussulman is concentrated in a single word, Islam ; devotion, resignation of our own will to the supreme decree. That word was not limited by Mahommed to his own followers ; it was used ungrudgingly of his Judaic and Christian predecessors. There is no fitter word for the religion of the human race. If there is any one word in Western language which can translate it fully, it is the word religion itself ; and that word needs interpretation for ears untrained in Latin speech. The word *Islam* unfolds itself for us, as for the followers of Mahommed, into the two great and inseparable aspects of life :— prayer and work. *Pray and give alms*, said Mahommed ; almsgiving in his wide interpretation of it, conceived with admirable wisdom relatively to the simple wants of his time, covering the whole field of doing good to men. Pray and work, said the mediæval saint : pray as though nothing were to be done by work : work as though nothing were to be gained by prayer.

In different ways and under every possible variety of language and symbol, the same thing is said by every spiritual leader of men in every age and country. I find it in Confucius, the founder of the faith that has kept

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Chinese society together for five-and-twenty centuries : I find it in the ancient theocracy of Hindostan ; I find it in the monuments of Egypt as their secrets are gradually revealing themselves to modern learning. I read it in the premature effort of Pythagoras, premature, yet profoundly fruitful of momentous result, to found in the chaotic democracies of Greece a discipline of life upon a human basis. And last of all I find it where most men think a monopoly of such knowledge is to be found, in the Hebrew and Christian Bible.

Islam, then, or in the English tongue, devotion—the devotion of our life to the highest, the bringing of our own will into accordance with 'the supreme will ; this is the word that sums up the lives of pious men in every age and every country. They have framed for themselves an ideal, a model, a pattern of what their life should be. They have done their utmost to make that ideal a reality. In other words, they have prayed, and they have worked.

Omitting then all those points in which the religions of the world are hostile to each other, leaving out of sight all those disputable articles of faith which, if they be exclusively true for any one case, must be false for all the rest, we find underneath all the countless varieties of form, something that abides, that remains for ever the same ; and this abiding truth is the groundwork of positive religion. That the foundations of that religion are not new but old, is the first reason why it deserves our notice. Were they new, its upholders would deserve the laughter that Molière heaped on the physician who pretended to have changed the position of the organs of the human body. Religion is simply spiritual health ; so long as man is man its principles must always be the same. No nostrum can secure it, no royal road can reach it, for it is

the very essence of the life of man ; it is the state in which all his energies are harmoniously guided to the highest aim.

That the value of prayer was something entirely apart from the personal and material advantages supposed to be derived from it, has been dimly felt by good men of all ages, and clearly seen by the wise. That men, by using set forms of words, should be able to effect a change in the laws of the distribution of wealth or in the direction of rain-clouds, is a superstition which, though it lingers in our official prayer-book to the present day, it is hardly necessary to meet with serious discussion. Thoughtful men in Greek and Roman times had entirely discarded it. The diffusion of a thin layer of knowledge in our own time is sufficient for its rapid disappearance. The mockery of sceptics and the deepest feelings of pious people, if they have not been in unison in this respect, at least have worked very visibly to the same end.

The flimsiest acquaintance with the laws of nature has shown the absurdity of supposing them liable to a continued process of miraculous disturbance from the arbitrary and inconsistent caprices of believers. And at the same time, the conviction, which with truly religious people has always been strong, has of late years become very far stronger, that the true purpose and meaning of prayer is communion with the Highest ; the outpouring of ardent aspirations ; the formation of a loftier and more ideal standard of life ; the earnest resolution to attain it.

With this loftier and purer conception of prayer it is very evident that Positivists are in complete sympathy. Nay, it is clear that so far as such a conception is formed, it is not merely in sympathy with Positivism, but is itself wholly and entirely Positivist. Positivism is concerned

with fact : with the facts of the world as they touch man, with the facts of man himself. And it is concerned with these facts not from speculative curiosity, but with the purpose of moulding them to the highest human uses. Positivism, then, is something which, taking its stand on what is real, aims at what is ideal. But, in the spiritual region, this is the very meaning and purpose of prayer : that taking the facts of our poor, feeble, soiled, imperfect nature precisely as they are, making a full confession of the truth as it stands, without concealment or self-deception of any kind, we should strive to purify and elevate it, availing ourselves of all the "means of grace" as the old religionists called them, that is to say, of all the influences for spiritual good that lie in profusion around our life, ready for all that will accept them, dwell upon them, and ponder them in their hearts.

To measure the facts of our life, concealing none of its failures, acknowledging its miserable shortcomings, to form an ideal standard for its amendment, using all the highest influences for good that lie within our reach ; this, then, would seem to be the true and permanent conception of prayer. Let us pass on for a while to consider what are these influences for good which surround us, and which may help each one of us to higher things.

The first and most obvious answer would be to point to the central object of Positivist worship, Humanity ; the assemblage of noble human energies which, during the long course of ages, has prepared this inheritance into which we have entered. Humanity is the highest that we know. There is no higher word to represent the supreme order to which man is subject. For Humanity being herself subject to the laws of the surrounding world, to the forces which, through a long course of ages, have fitted this

planet to become her habitation, to the supreme conditions of space and time governing the whole universe of things from human thoughts to stellar systems, is the representative to us of this supreme order ; and is clothed, in addition, with the intenser interest following from the human strivings, aspirations, and sympathies of which she is built up, and from the germs of unrevealed greatness which lie latent in her future.

Communion with Humanity, then, that is to say, the attempt to bring before ourselves strongly and definitely that stream of continuous effort for good, whether material or moral, which has flowed from the first ages till now, and which is the source of our spiritual life, would seem to be the sole centre and stronghold of Positivist prayer.

Yet it is not altogether so that Comte has regarded the subject. He knew human nature far too well to think that it was possible for men to rise suddenly, and by a single bound, from the love of self to the love of humanity. We are knit together by many bonds, some narrower and more intense, some weaker but more wide. Those who have broken loose from the stronger ties are not likely to feel the force of the weaker. Love gathers round the home and slowly widens to the fatherland before it can reach to higher and wider ranges. The narrower circle must be well filled before the outer circles are entered.

It was said of old, " If any man come to me, and hate not his father and mother, and wife and children, and brethren and sisters, yea and his own life also, he cannot be my disciple." These were no vain words, as the history of the Christian church has often proved. Some of the societies that have arisen in that church, and that have had much to do with its action, have striven hard to put

them in practice. The Dominican and the Jesuit deliberately strove, and not seldom strove successfully, to strip off the encumbrance of earthly affections, that so that they might devote themselves more ardently to the propagation of their faith. Admitting the heroic and the saintly side in the lives of very many of these men, and one must be blind not to see this, yet how terrible was the loss, how mutilated the life, how disastrous the result! how certain was it to come to this, that men would end by identifying their own narrow systems with the interests of their church; that, holding these to be supreme, and being unchecked by the noble inconsistencies that spring from home, and love, and friendship, and contact with men in the daily round of civic duty, they would be driven straight forward by one intense mechanical impulse, like a cannon-ball spending its force upon a wall of living flesh, till its power for misery was gone. Surely the history of the Spanish Inquisition, or the war waged by Jesuits in later times against the whole stream of human progress, or again, Robespierre's organization of massacre in the name of Rousseauist philanthropy, are proofs plain enough of what comes when men ride roughshod over the charities and duties of home life in the name of duty to God, or to the church, or to the human race; mixing up, as they are well-nigh sure to do, their aspirations for the public welfare with the fumes of combative self-will or irritated ambition; blinding their sense of public good with the prejudiced delusions of self-love; so that at last unscrupulous means are justified for pious ends, evil is done that good may follow; and the highest attributes of manhood, mercy, loyalty, and justice, are swept clean away.

Between the love of self and the love of Humanity,

Positivism interposes two intermediate objects of our love ; the home,* the city. With philanthropy severed from its root in the home and in the fatherland, with the abstract love of mankind that has no reverence and tenderness to spare for mother or wife or child, no loyalty to friend, no glow of patriotism at a fellow-countryman's heroic deed or brilliant thought, Positivism has no sympathy whatever. "It is from personal experience of strong love," says Comte, "that we rise by degrees to a sincere affection for all mankind." "The man who is incapable of deep affection for one whom he has chosen for his partner in the most intimate relations of life can hardly expect to be believed when he professes devotion to a mass of human beings of whom he knows nothing. The heart cannot throw off its original selfishness without the aid of that affection which by virtue of its concentration on one object is the most complete and enduring." †

In the home, then, begins with infancy our earliest training in the instincts of love, by which alone in after years our service of humanity can become real and fruitful ; and in the home, under pain of barrenness and failure, that training must go on till death. That ideal of life which the Positivist calls prayer is to be fostered and purified by daily thought on the ties which bind us to those we love, and whose lives form part of our own, whether in the past or present. Comte has dwelt on this largely in his Positivist Catechism, and has laid down with regard to it what some readers of that book call precepts, but what I prefer to regard as typical examples, drawn

* In this word is included the whole circle of private affections ; differing in range, intensity, and direction, according to the infinite variety of circumstance.

† *Positive Polity*, vol. i. p. 189, Eng. Trans.

from his own personal experience, and rendering his meaning far more definite and clear than it could otherwise have been : for the rest, to be modified by every one for himself in accordance with the infinitely-varying conditions of our personal life. Sufficient to say that those who have played the greatest part in forming the character of most men certainly, possibly of most women, are women rather than men. And since the formation of character is incomparably the most important work that can be done in human life, it follows inevitably that this fact, the predominance, namely, in the deepest things of our moral life, of womanhood over manhood, will show itself in the outpourings of private meditation, and ultimately, when the time shall be ripe, in public manifestations also ; the highest honour being paid where the highest honour is due.

Those who read Comte with uncandid or superficial thoughts have fallen into the mistake of supposing that he fabricated idols endowed with sentimental and impossible perfections, and offered them to men to worship. Were this true, it would surely be utterly inconsistent with the whole spirit of Positivism : for the very spirit of Positivism is frankly to admit and fully to acknowledge the Real with all its obvious imperfections and failures, as the basis from which the Ideal is to spring ; dwelling on the beautiful and hopeful and tender side of things, and throwing into shade that which is hard and callous ; with reverent and humble admiration for excellence ; with piety not less reverent for weakness and shortcoming ; always aiming at the true progress which comes by slow natural growth, not impatient for sudden changes of nature which can only be apparent not real. To idealize our relations with those we love is,—not to cut rag and tinsel into the shape and tint of artificial flowers,—but to imitate the skilful gardener

who contends with difficulties of soil and climate, and by patient, tender care brings the beautiful wild rose into one still more lovely in form and fragrance.

Such at least seems to me the spirit of that inward meditation with which Comte counsels his disciples to begin their day. Thankfulness for what we have received from others, earnest resolution to repay the debt by purer and more unselfish service ; rising slowly from the sacred influences of the hearth, to the wider range of public duty ; tilling the garden round the house before we reclaim Indian swamps or African deserts ; yet guided always and throughout by self-renouncing devotion to the highest hopes of humanity ; this is the meaning and purpose of Positivist prayer.

And if we are told that it is nothing new, we gladly accept that assurance ; believing as we do that it has been a part, and the best part, of the prayer of devout men from the beginning of the world.

Or if, again, it is said that systematic meditation of this kind is needless, because the highest life may be led without it, we need not deny this, believing as we do in the infinite superiority of noble action to noble thought or resolution of any kind. Yet wise men of all times, who have watched the instability of man's spirit, the changefulness of his moods, the uneven, uncertain temper in which he looks at his higher duties, have recognized the need of method, of discipline, of what may be called the hygiene of the soul. A few words of Thomas à Kempis will express this clearly.

"Trust not to thy feeling ; for whatever it be now, it will quickly be changed into another thing.

"As long as thou livest, thou art subject to mutability, even against thy will ; so as thou art found one while

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merry, another while sad ; one while quiet, another while troubled ; now devout, then indevout ; now diligent, then listless ; now grave, and then light.

“But he that is wise and well instructed in the spirit standeth fast upon these mutable things ; not heeding what he feeleth in himself, or which way the wind of instability bloweth ; but so that the whole intention of his mind tendeth to the right and best end.

“For thus he will be able to continue throughout, and the self-same, and unshaken ; in the midst of so many various events the single eye of his intention being directed unceasingly towards Me.” *

And let the imagination of each one try to conceive, for assuredly the imagination of the boldest would fail adequately to represent, the growth in all the nobler elements of human life, the advancement of that kind of progress which consists in the triumph of good over evil, that would result, were the feelings of religious men and women concentrated during the earliest minutes of every day upon the work of clothing with beauty and mercy and truth that one department of human life which the weakest and humblest have power to modify, the relations of their home. Think of the infinite reactions on public life that would follow were such motive powers set in action ; of the stimulus that would be given to truth and loyalty ; of the control that would be exercised over feverish speculations, or mean competitions, or noisy political faction, or acrid personal animosities. The public life of men would again become beautiful as in the noblest days of our forefathers ; only without the misery of international hatreds, with which the nobleness of Roman and mediæval life was so inseparably connected.

* Book iii. ch. 33.

It will have been remarked that I have spoken exclusively of private devotion, as Positivists understand it. I have said nothing of public religious manifestations. Nor have I at present very much to say. It will be noted, however, that the two modes of devotion, public and private, stand, neither in Comte's writings, nor by their intrinsic character, on the same level of urgency. The one is an essential part of the religious life, incumbent on all Positivists,* whether now or in the future, whether they live in large groups or dispersed and isolated. The other depends essentially on temperament, on opportuneness, on place and circumstance. The difference is marked in Comte's own life with unmistakable plainness. To private meditation and devotion he consecrated the first hour of every day for years. But he never attempted the composition or the recital of any public liturgy; advising his followers, when once they had made their position clear from all reproach of hypocrisy, to avail themselves of the religious services and assemblies of the Catholic Church, till the time should be opportune for presenting the festivals of the religion of Humanity with something like an adequate foreshadowing of their ultimate splendour.

Long before that time may arrive, however, meetings of those who share our faith, whether for purposes of social intercourse, of instruction, of practical action, or of religious commemoration, will be possible and expedient. The festival of to-day, and the commemoration of the death of the founder, have been observed in Paris for twenty years; and last year a large group assembled round the tomb of the founder, an example to be imitated in future

* When I say "incumbent," I mean that it follows inevitably from all sincere acceptance and application of Positive doctrine to the facts of man's moral life.

years, frequently by those who live near, once at the least in their lives by those whose distance from Paris is the greatest.

Gradually religious gatherings of all kinds will become more frequent ; and this is much to be desired. Only let them be regarded not as the end, but as the means to an end. Such meetings are not religion itself : they form but one out of many modes through which religion may become a reality to us. It is obvious, I think, that much latitude must here be left for differences of feeling and temperament ; much also for difference of circumstance.

The united outpouring of strong emotion acts, we all know, strongly upon each who shares in it. Let it be borne in mind that, apart from Positivist meetings, we are not left destitute of this source of spiritual strength. Knowing that religion of a most real though imperfect kind has existed in the world always, and is to be found everywhere around us, it is open to us, so soon as our own doctrinal position has become unmistakably clear, to be present, without hypocrisy, rather with deep and unfeigned sympathy, at the religious services of other faiths than our own. Extending this tacit co-operation with perfect impartiality to all creeds alike, Catholic, Protestant, or, Mussulman, we are preserved from entanglement in the dogmas peculiar to either.

People will feel, and must be allowed to feel, variously in things of this kind. I must be considered as speaking for myself alone, when I say that for my own part I get more of the sense of communion with my fellow-men, and even with the past and future of humanity, by listening to the organ and choir in St. Paul's Cathedral pealing out one of the magnificent anthems of the Anglican Church, than by the bare recital of invocations to Humanity in a

Positivist meeting. I speak, I again repeat, solely for myself in this, without venturing to criticise in the slightest way the feelings of others, which may possibly differ widely in this respect from mine. For in principle there is no difference whatever. I only feel that, for myself, I prefer to wait till the resources of poetry and music and the other arts can be called in to render with some approach to justice the varied splendour, the genial gaiety, the deep and wide sympathies, the sweet modulations of spirit, alternately solemn, bright, and tender, of the object of Positive worship. Think that the Positivist calendar holds up for our veneration, not merely Moses, and Bouddha, and Abraham and Mahomet, and St. Paul and St. Augustine, but also Homer and Æschylus, and Aristophanes, and Shakespeare and Ariosto, and Cervantes, and Molière, and Mozart; and it may seem at least worth considering, whether the infinite variety and many-sidedness of the festivals of humanity which future generations will enjoy, may not be concealed rather than promoted by attempts which with our present scanty numbers and these insufficiently prepared by long continuance of deep and inward conviction, must inevitably be imperfect and immature.

III.

Be this as it may, prayer, public or private, is but the gate through which to enter upon a field of work. Prayer without work is either a Pharisaical and hypocritical routine, odious to those to whom true religion is dear, or else it is mysticism; that is to say, a luxurious abandonment of the soul to elevated emotions, which, when not followed by prompt action, act as a spiritual opiate, and paralyse the powers they were intended to stir and kindle.

Prayer and work,—Desire united with effort, aspiration for the highest followed instantly by lifting of the foot up the first steep step of the long ladder that leads to it—this is the essence of all religion that has ever deserved the name. In other words, it is the essence of all spiritual health. What we preach is nothing new, we are told. If it were altogether new, if its main substance were not older than Rome, or Jerusalem, or the temples of Egypt, if we could not trace it back to the first family that clustered round a hearth, to the first rude combat where men stood loyally together in defiance of a common foe,—why then it could not be true. Man has the same physical frame as he had, modified in secondary ways, by climate and race, but unaltered in its principal outlines, or in internal organs; and man's mode of spiritual life, resulting from the ways in which men have lived together, and handed down the growing framework of tradition from one generation to another, is fundamentally the same also. True, the higher and more delicate the functions of life are, the more possible it is to modify them. But in their essence they remain the same. The heart beats on the left side of the chest, and not on the right, nor will all the physicians of Molière's plays alter that arrangement.

Therefore the religious state is essentially the same in all times and in all places. For there is only one human nature: under myriad modes of character and costume, still in all underlying principles the same. Religion is the health of that nature, the balance of its faculties, resulting from their concentration on an unselfish purpose which calls the whole of them into play. Therefore, there can be only one religion.

And yet, when we have said this, and laid it down as a

fixed starting-point, as a foundation stone on which the whole superstructure of our faith must rest, we know too well that from another point of view the case is far otherwise. For if there is one state, and one only of perfect health, there are many modes of the imperfect, many modes of disease; and equally various are the attempts to cure, be these chimerical or sound. It is not difficult to imagine a paradise in which there should be no hunger and cold, from which the wild beast scramble for existence, whether we call it war or industrial competition, should be utterly shut out, and where the only toil should be that of putting together new words, new shapes, new sounds, so as to make life more beautiful to those around us. There would be no religious problem in such a land as this, for life itself would be one continuous poem or prayer.

The facts of life, as we know too well, are far other than these. There has been a slow painful struggle upwards from the wild beast to the man, which is as yet not nearly over, and which has kindled in its course passions far fiercer than any tiger's; and the problem for wise men has been how to bring these wild desires and raging lusts into subjection; how to give the mastery to those feelings of love and of union, the germs of which are found everywhere among animals no less than among men, and which only await their time and opportunity of growth.

How did they solve this problem? How did they stimulate the principle of love and so reach the end, progress?

By revelation of a higher power, before which man bowed in reverence. "The fear of God is the beginning of wisdom." This was the language of the early religious teachers, Oriental, Greek or Roman. Not that they invented the gods whom they held up to men's worship.

They simply obeyed with the profoundest sincerity a great natural law of intellectual growth, the discovery of which is the starting-point of Comte's work. They sincerely believed that all the sights and sounds around them, all the thoughts within them, were caused by the will of a supernatural being. While teaching men they supposed themselves to be revealing the will of God. Faith in God was the foundation of their love, and the starting-point of their action. Love was their principle, the will of God their basis, progress their end.

Now the sole difference between the faith of Positivists and the faith of the old theologies is that for the Will of God we substitute the Order of Humanity.

Just as the planets, once thought to be moved at the pleasure of some deity within them, are now known to follow fixed and measurable laws, so we find it to be with the facts of human life. In due measure we can interpret those facts, and know something of the law that governs them, of the natural order which they follow. On that basis of natural order, of positive fact, we take our stand, making it the centre of our emotions, the starting-point of our action.

Hence the word by which so many have been offended, because it has to many so unsympathetic a sound, the word Positivism. Yet it was chosen by the founder, we may be very sure, with deliberate intention, and the more closely that intention is looked for the wiser will it be found.

Most people dislike the word because there is, they think, something dull, unimaginative, material, prosaic about it, as opposed to what is elevated, poetic, ideal. No doubt the word has carried this kind of meaning hitherto. But why was this? Not because truth was mean and

ugly, but because men's eyes were dim. They clutched at the facts that satisfied their hunger and thirst, and gave them warm clothing, and housed them comfortably; and these facts being to them very certain, they called them Positive. Meantime their higher nature cried out for nourishment, and no nourishment was at hand except such as could be drawn from shadows and imaginations, which certainly were not Positive, for they were as changing and as transient as the clouds of sunset.

Now the special mission of Comte in this world was to teach men that the higher spiritual facts connected with man's life and work were as certain, as demonstrable, as *positive* as the facts of the first four rules of arithmetic, or the facts of hunger and thirst, and lodging and shelter. The religion he preached was Positive religion, religion standing on a groundwork of undeniable fact, of demonstrable science, as opposed to religions resting on the shifting basis of disputed theological beliefs.

This is the very essence of Comte's work and life from the beginning to the end. To carry out this purpose must be the chief business of his followers. The most extraordinary feature of Comte's life is the unity of it—the concentration from first to last on a definite purpose. True, he worked for twenty years without ever using the word religion, which had at first seemed to him to be too closely involved in theological associations to be capable of being used without danger of misleading. But, in aim and purpose, the first half of his life and the last were absolutely identical. From his earliest manhood to the last year of his life his fixed object was to put an end to the anarchy of thought and feeling that was dissipating the energies and endangering the civilization of Europe. And he sought to do this by placing the highest spiritual

truths of man's nature on the firm basis of science. Whether he spoke—as in his earlier days—of Sociology becoming an inductive science, or whether, as in later years, of the demonstrable religion of Humanity succeeding to the revealed religions of antiquity, the essential meaning in both cases was one ; to convince men that the laws of mercy and of justice rested on the same sure foundation as the laws of number, or the revolutions of the planets. This was the restoration of faith as Comte conceived it ; the only faith possible in the nineteenth century, the only faith that could stand the test of every logical assault that could be brought against it.

The *Philosophie Positive*—that work which has made such a stir amongst men of culture, but of which they understand the bearing so very dimly—had no other purpose than this, to present all the principal truths affecting man's life in an orderly series, and to show that the laws or conditions of spiritual health were precisely of the same positive, scientific, ascertainable kind as the laws of his bodily health ; that the conditions of harmony among man's variable passions were as definitely fixed, though far more difficult to realize, as the conditions of harmony in the vibrations of musical strings ; that misery will follow injustice with the same certainty that a stone set free from the hand will fall to the earth. The first and the last object of Comte's life was to instil that sense of steady firm conviction which scientific truth establishes in the region of man's emotions and conduct.

Therefore, when I hear people speak of the "scientific aspect" of Positivism, as opposed to the "religious aspect" of Positivism, I ask myself, What possibly can be their meaning? it would almost seem as though we were getting back to the old theologies again, and establishing

a rivalry or a concordat between faith and science. To the older forms of religious faith science was undoubtedly either distinctly hostile, or at least indifferent: it stood outside them, either as an enemy or as a stranger. But in Positivism the case is wholly different. Science is not one of the "aspects" of Positivism; it is the very foundation on which it rests. Positivism is not, as has been said, Catholicism *plus* Science: it is a Catholicism become scientific, a Catholicism of which the principal dogmas are shown to be a component part of the order of the world; in exactly the same sense in which we say this of the laws of number, or the laws of electricity, or the laws of life. Without science, religion, in the Positive sense of the word, has simply no existence whatever. For while love is our principle of action, and progress is the aim of our action, order—that is to say the natural process of things as perceived by the scientific intellect—is the basis on which that progressive action is to rest.

Any organization of Positivism in which there is a so-called religious aspect separate from the scientific aspect seems to me to rest upon a mistake, and to be predestined to failure. Religion does not consist in the repetition of prayers or the performance of rites or ceremonies. These things may be religious, or they may be irreligious, according to the spirit that animates them. Religion is the devotion of our heart, mind, and will to the service of humanity: it is the effort for progress, animated by love, and proceeding on the basis of order. To know what this order may be is then of the very essence of Positive religion. It is the one specially new thing that we have to teach men, that goodness and justice, truthfulness and purity of life do not rest on the mysterious revelations of this or that prophet, be he

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Bouddha, Christ, or Mahommed, but on laws of nature, on an order of the world which the followers of all these three can recognize in common.

Therefore to make the conception of a scientific law as universal and as familiar as possible is a most vital part of Positive religion. It is this which explains the extraordinary persistence shown by Comte in popularizing the principles of astronomy in a course of public lectures repeated for fifteen years ; and also the fact that the last work of his life should have been a grouping together of the most essential truths of mathematics. The conviction is, therefore, very strong upon my own mind that the greater part of the work we have to do lies in the direction of implanting this conviction by every available mode in the minds and hearts of those among whom we live. The special work of Positivism is the establishment of a renovated education, an education which shall implant true religious conviction, by connecting the order of man's spiritual life with the order of the physical world. It is to this object that the director of the Positivist movement, M. Laffitte, has, during a long course of years, and with slight encouragement either from within or from without, directed his principal efforts, taking, as indicated by Comte in the last modelling of his synthesis, the two extremes of the scientific scale, the mathematical and the moral ; the perfect logical type of certainty and definite conviction, and the ultimate sphere of man's highest activity ; endeavouring thus to create a school of true Positivist doctrine ; to implant the sense of order, on which alone true progress can rest.

We shall not be true to our principles unless we follow, as far as our feebleness may admit, in the same path. More of us, it so happens, in our little English group,

are qualified to teach in the more human and practical end of the scale than in the more logical and abstract. But it is none the less important that those who undertake to teach sociology, to implant the source of that human continuity to which our whole social and spiritual life is due, should so far fill up the gap in their own education as to be aware of the indispensable links in that continuous chain formed by Archimedes, Descartes, and Leibnitz.

Failing this, there seems great danger lest Positivism, as taught among us, should present the appearance of a group of arbitrary and shifting opinions, listened to with the degree of respect which may happen to attach to those who deliver them, but having no other coherence or foundation.

The time will come, doubtless, when the foundations of the Positive Church shall have been sufficiently laid, and when, therefore, more effort can be concentrated on the superstructure which those foundations are to support ; when more regular, uniform, and copious expression can be given to our feelings of devout reverence for the past, and of ardent aspirations for the future ; when all conflict of doctrines being over, the festivals of the Religion of Humanity will call forth poetic energies among men and women, that are now dormant or at least compelled to clothe themselves in obscurer guise, working underground in wintry weather till the spring shall break. But this time is not yet ; and there would be, perhaps, some danger in premature attempts to realize it. For the present we must work and wait, content to leave the harvest to those that follow us. Those alone are fit to be Positivists who can accept this stern truth.

Where then does our work lie ?

28 ESSAYS IN POSITIVIST DOCTRINE

First, I would say, Progress, that is to say Positivist work, must be regarded as the development of Order. Our first work, therefore, the basis of all other work, must be to learn ourselves, to teach to others, or to promote the teaching of, the Order of Humanity. With love for our principle, that is to say, penetrating ourselves with the enthusiasm of humanity, we have to find out for ourselves, and to teach others the condition of wise action. The propagation by every available method of the Positive synthesis, the establishment of the Positive faith must be the aim of each of us. There is at present amongst us one man, and one only, who is competent himself to do the work in its entirety. I speak of the chief of the Positivist body, M. Laffitte. But it is possible for each one of us, from the least instructed upwards, to help him in this work, to encourage him by sympathy, and to contribute to the pecuniary aid which is still wanting. And this is the more urgent for two reasons : First, that M. Laffitte, from his peculiarly close intimacy with Auguste Comte during a period of twelve years, has been the depository of many practical applications of the doctrine that can be preserved in no other way than through his teaching : and secondly, because the city in which M. Laffitte's work is carried on has been for generations the centre of the great occidental revolution, and there is consequently a society there ripe for the application of Positivist principles to a degree of which we in England, where theology still possesses a firm hold, have little conception.

We, too, in London and elsewhere, though less perfectly, may and must do something in the same direction, penetrating those around us as far as possible with the historic spirit, with the principle of continuity : availing ourselves always for this purpose of the Positive Calendar, which it

will be our business to interpret and illustrate ; and at the same time doing what we can to fill up the deficiencies in our own training, and familiarizing ourselves for our own use, if not for the teaching of others, with the logical basis of our own system.

Secondly, it must be our work to bring forward the applications of Positive principle to the problems of the day, political and social, as they rise before us. The political problems with which we are concerned fall chiefly under the three heads of Oriental, Occidental, and National ; these every year lapsing into closer connection with each other. In the West it will be our duty to promote every movement of opinion that tends to the harmonious union of European States. We must patiently await their gradual elevation into a system of self-governing republics, purified from the two crushing weights that clog their progress,—their overgrown military system and their bureaucracy with its official machinery of stunted and stunting education, which the unfolding in its completeness of the Positive conception of teaching can alone supersede. So far as our own country is concerned, it will be our desire to see her influence used in resisting violent change, and especially in preventing the encroachment of the stronger States upon the weaker ; these latter being, as we think, in a more favourable condition than the rest for political advancement, the safeguard of freedom in the future no less than in the past. Should the Government of France remain what it is, one of moderate and peaceable though empirical progress, such a policy as I indicate would imply the continuation and consolidation of the Anglo-French alliance as a centre round which the smaller and less military States could rally ; the extreme West of Europe thus interposing a firm barrier to the extension of

the military vices of the Eastern monarchies, which themselves, as they underwent the process of collapse that inevitably, and perhaps soon, awaits them, would thus be best prepared to imitate the pacific policy of their neighbours.

It is, however, with Asiatic policy that English Positivists must be in the immediate future more closely concerned. In India we are laden with a weight of responsibility inherited from three generations which thoughtful men have long felt to be crushing. A policy of unscrupulous and frivolous ambition has led us during the past year to increase that burden by aggressive action, undertaken in disregard of the wisest expert judgment, and as deliberately defiant of the plainest principles of right and wrong as any recorded in the history of the Napoleons. Years may pass before the crop thus sown shall spring up and be harvested: meanwhile, the increasing chaos of Indian finance defers to a more distant day the time when we are to afford abstinence from a national crime now continuously committed for forty years,—the maintenance of Indian revenue by forcing opium on China.

It will be necessary then to let slip no occasion, first, for spreading instruction as to the facts of our Eastern policy to all who will listen to us; secondly, for entering into friendly and practical relations with some of those Orientals who are watching with keen interest the politics of the West, thus sowing the first seeds of what will ultimately become the public opinion of the whole planet, operating with irresistible force upon any isolated portion of it which shall ignore the plainest principles of justice.

Coming to our own country, we have to watch closely and calmly the inevitable results of the industrial anarchy

which for the last thirty years has become increasingly critical. False theories of political economy have stimulated the blind rush for sudden wealth which it was the very business of cultivated publicists to have controlled. The period of grace which, as a wise man warned us thirty years ago, would be given us by the repeal of the corn laws, has come to an end: unparalleled creation of wealth, instead of being stored up as a reservoir of force for social purposes, has been neutralized by unparalleled luxurious expenditure; competition, held up by economic teachers as their idol, has ended by degrading the very standards of manufacture on which its triumphs had rested; and men who face the future see that the people of England, concentrated in vast towns, and divorced from the soil to a degree unknown in any other country of the world, are confronted by all the menacing problems of thirty years ago magnified to a far larger scale, and without the hope of temporary relief, which unloosing the floodgates of free trade at that time afforded. Standing aloof, as we do, from every war of classes, holding ourselves free to judge, for instance, the action of trade unions with absolute independence, we cannot shut our eyes to the fact that the attempts now * going on to undo those legitimate results of workmen's struggles which have secured for them more favourable conditions of labour, need watching with most jealous care. And in these and other like questions we shall often be found—as we have been already found—taking up the cause of the weak against the strong, while ever guarding ourselves and others against the delusion of supposing that any mechanical or forcible solution, whether unionist or socialist, can touch the deeper moral evils which lie at the root of suffering.

* 1878-9.

Here, as in the battle of opinion which is raging round us, our aim will be, alliance with good men of every school and party as far as they will allow themselves to work with us. There is much active philanthropy around us from which, while we respect its motives, we feel bound to stand aloof; because it is of the kind that seeks to cure a transient evil by sacrifice of permanent good; to give temporary relief at the cost of permanent misery. We cannot help poor women to get rid of their infants in crèches, in order that they may earn more wages; the evils resulting from that course, such as careless procreation and nurture of children, lowering of a standard of family life already too miserably low,—being, as we conceive, tenfold greater than the temporary pangs that are alleviated. But gladly should we co-operate with the wise efforts now being made in various parts of London, whether by clergymen or others, to elevate the condition of the poorest, by fostering their sense of independence, by improving their dwellings, by promoting among them the highest artistic culture, and by entering with them into relations of personal friendship. It may be that a few years' work with such a society as that for the Organization of Charity would be useful to some of us in more ways than one.

Animated by the love of humanity, holding fast to our belief in the permanent principles of order, to our hopes in ultimate progress, we refuse no alliance, we are intolerant of no creed. We work side by side with anarchists eager to uproot a palpable iniquity; and side by side with retrogrades, firm in the defence of some ancient bulwark of social life against the assaults of lawless lust, or sordid avarice. *Ohne Hast, ohne Rast*, unresting, yet not restless, we wait for the time when our own creed shall approve

itself as the central stream in which all the stormy waters and shifting eddies of European faith can unite: when it shall be seen to offer the most certain and effectual way of living for others: and to hold out the hope of the surest and the purest blessedness, because the most free from the sense of personal reward.



II

RELIGION AND PROGRESS *

"L'homme devient de plus en plus religieux."

AUGUSTE COMTE.

ABOUT six weeks ago a remarkable man, whose powers of reasoning and purity of life are recognized by all his countrymen, and who, by a great part of the Christian world is regarded, and justly regarded, as the most forcible expositor of Christian doctrine now living, was summoned from an obscurity of forty years to take his place as a prince of the Catholic Church. His words on that great occasion were marked by the beauty of feeling which has shown itself in everything that Cardinal Newman has written, and also by the unmistakable clearness that has always distinguished what he says from most other theological utterances of our time. "To one great mischief," he said, "I have from the first opposed myself. For thirty, forty, fifty years I have resisted to the best of my powers the spirit of liberalism in religion. Liberalism in religion," he went on to say, "is the doctrine that there is no positive truth in religion, but that one creed is as good as another; and this is the teaching which is gaining substance and force daily. Religion is in no sense the bond of society. Hitherto the civil power has been

* This Address was the last of a series delivered in the Co-operative Hall, Castle Street, in May and June, 1879.

Christian. Even in countries separated from the Church, as my own, the dictum was in force when I was young that Christianity was the law of the land ; now everywhere that goodly framework of piety which is the creation of Christianity is throwing off Christianity. The dictum to which I have referred, with a hundred others which followed upon it, is gone or going everywhere ; and by the end of the century, unless the Almighty interferes, it will be forgotten. Hitherto it has been considered that religion alone, with its supernatural sanctions, was strong enough to ensure the submission of the mass of the population to law and order ; now philosophers and politicians are bent on satisfying this problem without the aid of Christianity."

Cardinal Newman said much more, but it was to the same purpose. All that he said, like all that he has written throughout his life, has, as I said, that inestimable gift of clearness which is, after all, the principal purpose of human speech, and which lets us know what it is he means by the word Christianity. On the same copy of the *Times* from which I read his words I find a speech from an enlightened theologian of a different school, the Dean of Westminster. He was speaking at the annual meeting of the British and Foreign School Society, and he dwelt at some length upon the principles on which that society was based. Those principles, he said, consisted "in that common basis of Christianity on which education can be conducted without exciting those peculiar sentiments, or bringing to light the badges, which divide us." And he went on to explain what he meant by a reference to the controversy now pending as to the Burial Question. It was certain, he said, that in churchyards there could be no angry controversy, because there were

common principles of humanity, feelings deeply rooted, not merely in Christian but in human nature, which asserted themselves on such solemn occasions, and made any use of sectarian bitterness impossible.

Now I suppose that nearly every one who heard the Dean of Westminster agreed with him on the practical question at issue, as we now present should probably agree likewise. But for the moment I call attention to the two speeches of these two doctors of the Christian world, as showing what incompatible things are included in the word Christianity. By the one speaker, Christianity, whatever else it means, means at any rate a resolute adherence to the tenets of the Catholic Church, embodied in definite creeds, based on miraculous incident, and handed down from generation to generation almost unchanged through twelve or fifteen centuries. The meaning of the other speaker is less easy to define. It is difficult to distinguish the Christianity of which he speaks from the spirit of philanthropic benevolence found alike among those who accept and among those who reject the Christian faith. And in any case it would seem the expression of precisely that spirit of liberalism in religion to protest against which has been one of the principal aims of Cardinal Newman's life. Christianity is thus divided in a far deeper and more real way than at the time of the Reformation. There, at least, both sides, Protestant as well as Catholic, had a clearly defined creed. Now the creed of the first has become drifting as cloudland, adapting itself to every new change of circumstance, but as soft and shapeless as the morning mist. The other remains as a majestic ruin, solid and unchangeable, because the slightest change would crumble it to dust.

It is in no spirit of detraction that I use these words.

The beauty of life, the calm and trustful temper, the pious hopes, the self-denying zeal that cluster round Christian churches of every kind, are facts which every one must see who does not blind his own eyes ; facts which I hope every one here would willingly recognize. And there are many for whom this is enough. Their daily round of duty spends all their force ; they have not leisure or strength for entering into new regions of thought, or for promoting unpopular ideas. They see much that is good in the old creeds,—heroism, self-denial, elevation of soul. The foundations on which these creeds rest lie deep ; they care not to examine them.

Now to the large mass of conscientious men and women who do their duty in this simple, plain, straightforward way we have nothing to offer but our profound respect for their convictions, our sincere desire not to disturb them, and our hope that they too may learn to respect the motives on which we act, our willingness to co-operate with them in every good work. Our own first message is not to them, but to that large and increasing number who are seeking for convictions, and who as yet have found none. And this class has an importance far beyond that of numbers ; for it includes a very large proportion of those who have read, who have thought, who have mixed in the political life of our time. We appeal to those who have passed or are passing into that stage of negation of all supernatural belief which since the middle of the last century has become so prevalent in France, and which is by this time universally diffused through Western Europe. Many of those who are in this case are the very salt of their generation. They are the most conscientious, the most aspiring, the most highly cultivated, the most tenderly loving, the most ardent to leave the

world better than they found it. Only they do not know where to betake themselves ; they have no rallying point. Therefore the weaker of them waste their lives in misguided and often mischievous philanthropy, and the stronger, seeing through the fallacies of this, sink into silence and ignoble apathy,—

“Like a sword laid by
That eats into itself, and rusts ingloriously.”

Sixty years ago a young lad, a poet of extraordinary genius, astonished the world by a frank and eloquent defence of Atheism. It was, in principle, little more than a selection from prominent French writers of the last century. But every syllable of it was lit up not merely with poetic fire, but with zeal for the progress of man that marked him out at once from the herd of scoffers and destroyers. The name of this poet was Shelley. And it is very noticeable, though I think that few have remarked it, that Shelley's second poem, written a year or two afterwards, though without a single concession of any kind to orthodoxy, has for its motto a passage from the Confessions of St. Augustine. I quote it, because of its bearing on what I have to say :—

“Nondum amabam, et amare amabam, et quærebam quid amare amans amare.” “As yet I did not love, though I desired to love ; and I sought longingly for what should be loved.”

Now in the very years when Shelley was pouring out his soul in scornful rejection of dead idols, and blind aspirations for an ideal that should come hereafter, another young man of nearly the same age was meditating in Paris over the same problems. His boyhood, like Shelley's, had been marked by precocious zeal for the widest interests of humanity. Like Shelley, he was an ardent Republican, and

like him he had very early come to see that the dogmas of the Established Church were unbelievable. But to these conditions he added a vigour and firmness of character which to those who knew him recalled the old Roman type; a tenderness of nature like that of Dante, and a philosophic grasp and breadth which to some of us appears without a parallel since the age of Aristotle. He saw that the French Revolution, and the ever-widening circle of disorder which was reaching into every department of human life,—the family, the state, the intercourse of states with one another, the intercourse of human beings with one another,—was no transient thing, no matter of to-day or yesterday. It was the final outcome of a great war of principles that had been going on in Europe for five centuries. The two most prominent combatants in the battle were, and still are, the Catholic Church on the one side, the Revolution on the other. The divine right of the Church, as the representative of God, to govern men on the one hand; and on the other the inherent right of men to govern themselves, or even to dispense with all government whatsoever. The dispute seemed without an issue, because it consisted of strong statements on either side equally incapable of proof. The Church says, Thou shalt accept me as the guide of life. The Revolution says, Every man henceforth shall be his own priest. What end could there be to such a conflict?

Now Comte saw that the end lay in bringing into the facts of human life that sense of quiet, firm, immovable conviction which we have with regard to the world around us, so soon as scientific men have found out the natural progress, the law, according to which these facts take place. The irregular movements of the planets among the other stars were very alarming and perplexing to men for

thousands of years, until astronomers had found out that they moved according to a fixed law. Lightning terrified men in the same way till the laws of electricity were discovered. Was there any law of the same kind to be found in the revolutions of human affairs? Was there any natural process of growth to be discovered by which opinions and principles, which were apparently in deadly conflict, could be shown to take their place as part of the ordinary healthy development of man and of society?

Comte discovered such a law. Like all great scientific discoveries, it had been dimly apprehended by others before him. But by none had it ever been worked out in all its details and applications. Comte showed that it was a natural law in all departments of human thought that we should begin by attributing what we saw to supernatural agencies; that we should end by doing without these unseen powers, and by simply watching how things went on. He showed how in astronomy, in physics, in chemistry, in biology, we began with theological imaginings, and ended with positive explanations. There were gods of the planets, gods of the winds, the waves, the lightning; gods dwelling in the forest, and clothing themselves in the likeness of beasts, and birds, and men. Then when we found how the planets moved, how plants and animals grew, these gods disappeared.

But it was not by a single bound that our belief passed from the supernatural to the Positive stage. There was an intermediate stage, in which the supernatural agency, the god, was replaced by a metaphysical abstraction. Why does this animal live? The first answer was, because God had breathed into his nostrils the breath of life. That was the theological answer. The second answer was, the animal lived because its blood was pervaded by a

mysterious abstraction called vital spirits; or because there were mysterious particles in its substance called "physiological units." That was the metaphysical answer. And, thirdly, men gave up asking the question altogether. Instead of asking why animals lived, they set themselves to find out how they lived, and how their life could be modified for good or evil. That was the Positive answer.

Then Comte applied the same law to the facts of human life. In ancient days every institution, every rule of life came through the mouth of a lawgiver who was supposed to have received it direct from the gods. That was the theological answer. Then came the time when everything had to be squared with the sovereignty of the people and the right of private judgment. The Rights of Man were called in to explain everything. Every one has a right to do what will not injure his neighbour, it was said. It would be difficult to defend truth and honesty on this basis. Lying may often be no injury to your neighbour. By stealing your neighbour's property you may often hinder him from making a bad use of it. The rights of man will help us but a very little way in these things. However, this was the metaphysical answer.

Then comes the Positive answer. We find certain institutions, certain actions surrounded with a halo of sanctity. There is a sacred tradition, a deep inherent prejudice or pre-judgment in favour of honesty, chastity, truth. We begin by accepting that tradition as a fact of social life; not in any spirit of blind absolute subjection, but with the intention of testing it. We test it by the permanent interests not of our own poor transient life, but the life of the human race. We find that these institutions, prejudices, and traditions are inseparably bound up with the past life of Humanity; that they are

necessary to her growth in the future. Therefore they acquire for us a new sacredness. Their ultimate origin it may, or it may not, be possible to discover. Further search may throw partial light on them. Much of them may be irretrievably lost in the abyss of pre-historic time. We accept them, cherish them, perpetuate, and enlarge them.

This is the Positive answer.

Such, in a very few words, was the discovery made by Auguste Comte sixty years ago: the discovery that all our beliefs in every department of thought, passed, or tended to pass through these three stages—*theological*, *metaphysical*, and *positive*. The explanation of the present disorderly state of society followed. He showed that on social and moral subjects the process was not completed; that some men were reasoning on *theological* principles; some on *metaphysical* principles, some on *positive* principles.

Now the importance of this discovery was twofold.

First, it was the beginning of the science of *Sociology*. It introduced for the first time into the affairs of human life that sense of quiet firm conviction which men like Kepler, Galileo, Newton, Bichat, Faraday, have been establishing during the last three hundred years in the facts of nature round us. In science you have a government of belief without any tyrannical compulsion of it. Every one may go on believing, if he chooses, that the earth is flat, and that the sun moves round it. But as a matter of fact all people with a smattering of education believe, and that against the evidence of their own senses, that the earth is round, and moves round the sun. And yet hardly one of these people, certainly not one in a hundred thousand, can go through the proof of this belief. They take it on trust from mathematicians and

astronomers, and nobody thinks them irrational for doing so. Now the discovery of Comte, of which I have been speaking, was the first step towards bringing about this quiet sense of scientific conviction in social matters, which has long ago been established in astronomical and physical matters.

This was one result, and a most important and fundamental one. But there was also another, and one of quite a distinct kind.

This discovery of a natural law of growth in human beliefs made it possible for the first time to sympathize fully and deeply with the religions of the past ; to recognize the immensity of our debt to them ; to feel our continuity with them. It lies therefore at the very root of the religion of Humanity.

I have heard people say, when talking about Positivism : It is hard to ask me to believe that all the brave and devoted men and women who have lived and worked and struggled in the world until now have been all their lives acting under delusions and false hopes. Is it now for the first time in all these thousand years that men and women are beginning to have a glimpse of the truth on what concerns the highest aims of our life ? We cannot believe it. You are asking us to break off utterly from our whole Past, and begin the history of the world again. You ask too much. The sacrifice is too painful. We abide by what we have received from our fathers.

Now since the men and women who have such thoughts as these are just those whose sympathy is the tenderest and the widest, reaching as it does far back to those multitudes whom they have never seen, and who have long ceased to live, they should be answered, if there is an answer to give them.

And mark, first, that these painful thoughts do not occur now for the first time. They come with every great religious change. The same question was asked by pious Pagans when Christianity first came into the world. And Christian teachers had no answer to give. Neither has the pure revolutionary thinker any answer. I have heard one such speak of the whole history of the Catholic Church as of a period in which the human race was suffering from a pestilential fever, and was only now beginning to recover. He who said this was a man of singularly ardent and unselfish aspirations. But his belief was as miserably narrow and mutilated as that of the Christian of the third century burning Greek manuscripts and breaking Greek statues. Every one who loves Shelley's poetry, and feels the lofty inspirations of love and sympathy that kindled every page, must have been pained in the same way by the fatal narrowness of a philosophic creed which could see nothing in the religious leaders of bygone ages but ambition, tyranny, and imposture. So eager was he to fill the whole universe with his sympathy that his thoughts reach back even to the time when the Earth was preparing herself to become the dwelling-place of man. But to the past history of man himself his revolutionary creed made him utterly alien and hostile.

Now see how vast a change was contained in Comte's law of Development. Instead of the hard angry antagonism between the old and the new, which had risen up hitherto whenever any new thought came into the world, all the creeds of the world were brought into harmonious union. Things that seemed quite incompatible were shown to be part of one and the same process. As in a stream winding tortuously in a flat valley, one part seems to be travelling from west to east, another part from east to west, but in

reality the water everywhere is travelling towards the sea, so it is with the history of human faith. The founders of the great religions of the world put forward doctrines which seemed utterly incompatible with each other. The Sky-worship of Confucius, the divine multitudes of Hindoo and Greek religions, the monotheisms of Moses, of St. Paul, and of Mahommed, the revolutionary zeal of Voltaire and Shelley, were no longer in deadly antagonism, no longer bandied between them the harsh words, pagan, miscreant, bigot, heretic, infidel, impostor. They were seen, so far as their upholders were sincere and true to themselves, to have been working together by one and the same law of growth, towards a common goal. The pious labours, the strenuous meditations of Christian men and women in the dark ages were not wasted, because their forms of thought, their modes of conceiving the Highest, were other than ours. They have entered into the growth of Humanity: we are what we are, partly because of them.

And this is true, though it is harder to realize, even when these different modes of faith exist side by side in the same population, sometimes even in the same individual. The very first application made by Comte of his law of Development was to show that the anarchy of Western Europe, then as now, was due to the incompleteness of the process of development in different parts of the population; so that, to use his own technical language, the three methods of philosophizing—*theological, metaphysical, and positive*—were all being employed at the same time.

Now the very fact of analyzing the complications of modern opinion in this way, of showing that the pain and suffering was very often of that kind which belongs to incomplete growth, was in itself likely to breed a patient,

tolerant, forbearing spirit. For let us be very careful to remark this point. If Comte had simply said, Here are these three stages, theologic, metaphysic, and positive, and those who have reached the third or second stage are in advance of those who have reached the second or first, he might be thought to be encouraging a spirit of arrogant intolerance between the three. But what he showed was that different subjects of thoughts were being treated on opposite methods, sometimes by one and the same mind. Our own great natural philosopher, Faraday, was a positivist in matters relating to electricity ; but in all that related to the spiritual affairs of man he was content to remain in a purely theologic stage of thought. Comte never for a moment encouraged people to think that all theological thinkers were men of feeble minds as compared with positive thinkers. Such a mind as that of Cardinal Newman's would alone be sufficient to refute such an idea, should any one be tempted to put it forward. But the fact is that Comte took pleasure in pointing out what important contributions to social philosophy had been made by theological thinkers, and not merely by St. Augustine, St. Thomas Aquinas, St. Bernard, and Thomas à Kempis, in the middle ages ; but in our own century by Chateaubriand, De Maistre, and other champions of Christianity against Voltairianism. He said to the scientific world : So long as you confine your scientific researches to the physical world around you, or to man's animal nature, so long as you refuse to enter into the domain of the social and moral nature of man, so long will the world refuse to regard you as its spiritual leaders. For though the world wants steam-engines and electric telegraphs, there are other things which it wants yet more. It wants to be taught what to believe, what to worship, what to

hope ; how to act, how to suffer. So long as your science declines to enter upon this field, so long will it have to remain content with a very secondary and subordinate place among the influences which act on the European mind.

And to the theologians he said, You profess to occupy the central field of human thought. You cannot, indeed, pretend to put forward an all-embracing doctrine ; because on questions of science, on questions of politics, on the practical ordering of society, even on the education of the young, people no longer listen to you. You defend certain fundamental traditions of morality without which society would fall to pieces. For this we owe you our cordial and unfeigned thanks. But is it not beginning to occur to you that the institutions which your doctrines defend are seriously endangered by the decay of the defences ? that in its defence of marriage, for instance, theology is in reality exposing it to the attacks which were intended for itself ? Face to face with Russian Nihilism, again, are honesty, truth, chastity, respect for human life to be left with no other bulwark than yours !

In order to make it perfectly clear what he meant by applying the scientific spirit to the study of society and of man, Comte devoted many years to a detailed arrangement of the principal truths of each science, beginning with the simplest truths, those of number and of space ; passing to the laws of the physical world around us, the laws of heat, electricity, chemical affinity, and so on ; thence to the laws of living objects ; so preparing the way for the most complex of all objects of study, that of society and of man. That he was considered competent, even by those who did not accept all his conclusions, to do such a work as this, is shown by the fact

that three of the greatest mathematicians of the day (one of them the very greatest),* three of the greatest biologists, and the most illustrious of all naturalists, Alexander Humboldt, attended the long and elaborate course of lectures in which he went through these subjects, and which were afterwards published as his *System of Positive Philosophy*.† The concluding half of this work is the application of scientific method to human affairs. It contained the proof that the development of what we call civilization, our standard of right and wrong, our conception of duty, were the result not of supernatural revelation, but of the long arduous struggles, generation after generation, of brave men and of good women. They have been the growth of Humanity.

These, then, were the two results of Comte's great discovery of the law of the three stages of human belief. First, the extension of scientific law, of the conception of a definite ascertainable order, to the facts of human life, as opposed to the arbitrary will of a supernatural Power. And, secondly, the sense of Continuity; the proof that all the previous struggles of men were not lost to us, that though the forms of their belief might change from one generation to another, yet that all, fetichist, polytheist, monotheist, atheist, had been each in their own way working to one common end. Our more perfect state has grown from their labours. To look upon ourselves as

* Fourier.

† As statements have been put forward leading some people to think that Comte in his later years disavowed this earlier treatise, it is well to remark that this is a complete error. In the preface to the third volume of his *Positive Polity*, he explains the necessity of studying his former work. *Le recours à mon premier travail devient particulièrement indispensable envers le mouvement moderne, &c.* Nor did he ever cease to speak of this work as his *ouvrage fondamental*.

independent of them would be as insane as for the blossom to assert its independence of root and branch. All generations past, present, and to come, are joined together in one common service.

The first twenty years of Comte's philosophical life, from 1822 to 1842, were devoted to the working out in detail of this vast conception. Let it be noted that the word which forms the principal subject of my lecture to-night, Religion, was as yet not used by him. The thing is there indeed, but not as yet the name.

The influence of a remarkable woman brought about the crisis, which, though it changed neither the nature nor the direction of his thoughts, yet gave them new intensity, and a simpler and stronger form. It raised them from the obscure recesses which only a few students of philosophy could enter, into the open air of day, where from that time they have become a living force in the world. Henceforth they have become available for the service of all men and women, who, ardently desiring to see and to share in the highest life, have cast off the old faith without as yet seeing any way to the new.

This Continuity, this working together of countless generations throughout the Past and the Future, this is what we call Humanity. Here is the source of our highest Reverence and our highest Hope. Here is to be found guidance for each one of us in the efforts of our own short life. For that life may either be spent in conflict with humanity or in union. It may be a life of rebellion, spent in weakening, so far as one man can weaken it, some sacred tradition ; in spoiling the happiness, and thus thwarting the work, of good men and women around him. Or it may be a life of indolent self-seeking pleasure ; and whether such pleasure be of

the refined Epicurean sort, or be coarse and low, the life spent in seeking it has to be maintained like other lives, by the labour of others, and is therefore a burden upon them—not an organ of Humanity, but rather a parasitic growth. Such lives as these are in the truest sense irreligious lives. They are not bound up with the life of Humanity. So far as in them lay, they have hampered and retarded her growth. They are cast out from her.

When we speak with pride and affection of England, we mean all the hard and honest work—material, intellectual, and moral—that has gone on upon the soil of this island from the earliest ages until now; ploughing, digging, reclaiming of marshes, clearing of forests, toiling in seed-time and harvest, in the mine, and at the loom; strenuous defence against unprovoked attacks, wise labours of statesmen to make just laws; the brainwork of her thinkers and poets and spiritual teachers; the lives of her mothers and daughters who have maintained the standard of purity and of mercy. All this is what we mean by England. We do not include in it all the criminals, all the slothful, the greedy, the selfish, and the unjust, whose lives have weighed down her destiny, have been a drag upon the wheels of her progress. It is in spite of sin, public and private; in spite of many worthless lives and many national crimes; in spite of outrages and wrongs in Ireland, in China, in India, in South Africa, that the name of England still retains a hold on the respect of men. And so with Humanity. It is the triumph of good over evil that is the object of our reverence; and, to a conscience not wholly seared, the strongest impulse to repentance for a life of selfishness will be the thought that, so far as in one man may lie, he has hitherto not forwarded but has delayed that triumph.

I have said enough to show that the Religion of Humanity is something very different from philanthropy, and very different from utilitarianism. The mere impulse of benevolence, without thought or principle, will lead woefully astray. A man is condemned to death for a foul and treacherous murder, and the instinct of benevolence cries out for pardon. But how if by your weak indulgence the sanctity of human life be infringed, the sacred horror for treachery be lessened? These things are of far greater moment than to preserve a life. To the condemned criminal himself the Positivist teacher would say: The sole reparation by which the last moments of your life may redeem the past is that you should desire to die, to yield your life as a sacrifice, as a solemn sacrament, by which loyalty and faith and hatred of foul treason may be increased among men.

So, too, it is not by their seeming usefulness that doubtful acts are to be judged. To tell a lie may be useful, to steal may be useful, to violate every commandment of the Decalogue may be useful, on this occasion or on that. But how if the sacredness of truth be tainted in yourself or in those around you? How if this standard of honesty and righteous dealing be lowered? What fleeting advantage would not be purchased thus at infinitely too high a price?

This, then, is the spirit in which the Religion of Humanity deals with these elementary matters of right and wrong. Our conscience is the precious gift to us of Humanity. Our rule of right and wrong is the slow arduous achievement of thousands of years of struggling effort. Just as Capital, that great instrument for the material advancement of man, is not the product of any one man, nor of any one generation, but results from the

stored-up labour of successive generations ; just as our science is not created by Isaac Newton, or by any other Englishman or Frenchman, but by Greeks and Arabs and thinkers of many nations handing down the increasing store from century to century ; so it is with that infinitely more precious part of human wealth, that which lies stored up in the consciences of men and women.

It is not our business to make a clean sweep of all the existing rules of right and wrong, and to say, These are bound up with all kinds of worn-out theological beliefs, therefore we can have nothing to do with them : we must start afresh, and begin again on the principles of Positive science. As well might the modern astronomer decline all aid from the observations of the astronomers of antiquity, because they were based on a wrong notion of the position of the earth in the solar system. As well might we pass by with indifference the poems of Dante or of Homer, because the Purgatory of the one, and the Olympus of the other, have lost their terrors. We have all of us a large stock of prejudices, that is of instinctive judgments, felt and expressed without any long reasoning process. Well for us that we have them. Rightly used, they are the most precious possessions that we have. A young man once said to our philosopher Coleridge, "I will believe nothing that I cannot understand." "Then, sir," was the reply, "your creed will be the shortest of any that I know." If we want to find men without prejudices, it is to the lowest of the savages that we must go ; not to such tribes as the Zulus, who have shown strong prejudices in favour of obedience to their king and fighting for their country, but to races far nearer to the apes than they. There we shall find, no doubt, men stript of many of the

prejudices prevalent in Europe and Asia as to honour, and loyalty, and truth, and chastity, and mercy.

These things are the slow creations of Humanity. It will be the work of the Religion of Humanity to sift them from the ore and the dross with which they are mixed up, and which obscures their brightness, so that they may become more precious to men than they have ever been.

Thus the chief business of the Religion of Humanity is to gather together the noblest traditions of our race, to preserve them, and to hand them down, a steadily increasing store, to those that shall come after. Every one is to help in this great work. The philosophic thinker has to trace back their history, to show how they grew, to show how they have become inseparably bound up with the life of Humanity. But before we can reason scientifically about a subject we must know the facts. We must observe the stars before we can reason about their motions. Blind men cannot observe the stars. And those who are blind of heart cannot speak or think to any purpose about things which the heart alone can reveal. It is vain to try and build up a philosophy of music, unless you have first an ear for music. And so the spirit must be attuned, and must be made sensitive to deeds and thoughts of mercy, and purity, and justice, before there can be any ranging of these facts in their right relation to each other; that is, before there can be any science of moral action.

Here it is that the subtle insight and the delicate conscience of the best women will render in the future, as in the past they have rendered, such inestimable service. The instinctive choice of what is noble and pure, the instinctive repulsion from what is base, are as needful for wise thought in human conduct, as keen quick vision through a telescope is to him who would forecast the

position of the moon or planets. So, too, and in the same way, do the great poets and artists contribute to the work. They raise us to that higher atmosphere in which the noblest things become more clearly visible to us; they make the sense of the soul keen; they remove the blindness from our hearts, so that we may get to know what the facts are on which our principles of right and wrong action are to be based.

In what I have said I have not so much been attempting to give a complete explanation of the Religion of Humanity, as to show how it came, and how it deals with the facts that lie at the deepest roots of human life. We are sometimes asked, But what is your sanction? If you can tell us nothing about eternity, if you have no ultimate everlasting state of punishment and reward to follow this short, fleeting life, what is your test of right and wrong doing? Why keep faith with your neighbour, and disappoint him not, though it be to your own hindrance? Why toil and till the ground for harvests which you cannot hope to reap? Let us eat and drink, for to-morrow we die.

Our answer is that the Religion of Humanity brings its own sanction along with it. Does it give men and women, rich and poor, learned and simple, enough to live for? Does it call forth all the powers of will, of thought, of sympathy? Does it answer to our deepest feelings of reverence and love? Does it satisfy our longings for ideal beauty? Does it put an end to the strife of intellect with feeling by disconnecting our highest hopes from a framework of miraculous legend? Does it cease to taint the very source of righteous and unselfish action by the so-called sanctions of eternal happiness, or eternal torture? Does it supply a principle which can keep the ancient laws

of right and wrong unbroken? Does it give clear, definite teaching as to the path of duty, pointing out to rich men the sinfulness of luxurious waste? Does it ennoble the life of workmen, not merely by a juster repartition of leisure and comfort, but by making them soldiers in an organized industrial army, whose purpose is to subdue the powers of nature for wise human uses? Does it kindle in rich and poor alike a wholesome hatred for rotten and dishonest work, raising them to due reverence for the beauty of the Earth, so that forest and lake and ancient stones shall be again sacred to us, as they were sacred to our earliest forefathers?

If the Religion of Humanity helps us to subdue the paltry cravings of human selfish passions by inspiring us with the hope of working for such a prospect as this, we need ask for no further sanction. It brings its own sanction with it.

I have dwelt principally on its applications to private life, because these things lie at the root of man's conduct. They must form the ultimate touchstone of every religion. Positivism does not create morality any more than Christianity created morality. Honesty, chastity, mercy, truth, date back from far beyond the Christian era. What Catholicism did was to defend these precious possessions, and to enlarge them by making them part of the doctrines and institutions of the Church. For a very large and influential part of the population of Europe those institutions have fallen into decay, those doctrines have ceased to be credible. Positivism arises to do the same work in a different way. Speaking to those, and to those only, who cannot believe that the laws of right and wrong were revealed once for all on a given hour and day in a flame of fire from Mount Sinai, or that they have any special

and exclusive connection with miraculous events stated to have taken place at Jerusalem, Positivism upholds Humanity. They have grown with her growth. They are inseparable from her life.

But let us now pass from private life to public. When Cardinal Newman made his celebrated speech at Rome, expressing unshaken confidence in the final triumph of the Church over all the hostile influences of modern progress, it occurred to some to ask, How does that Church deal with such a fact as the Zulu war? Here we see the whole forces of the English nation bent upon the destruction of a barbarous nation, whose sole crime is to have defended its independence. There is a deep and wide consciousness throughout the nation that we are guilty in this matter. Some of us feel as though a personal taint had fallen upon them. Yet from the leaders of the Christian Church, Catholic or Anglican, has come no voice of reprobation, one only excepted, and that of suspected orthodoxy, which has been ever raised on the side of justice—the voice of Bishop Colenso.*

Now, had this instance stood alone, it would not have been worth while to refer to it here. But it does not stand alone. The dealings of the Christian world with the non-Christian nations have been almost uniformly iniquitous from the first ages until now. And the reason is obvious. It has been impossible for a Christian statesman to sympathize with a non-Christian creed. The reckless destruction of the ancient civilizations of Peru and Mexico by the Spaniards of the sixteenth century showed this. There were many good and merciful men in the Spanish armies who deplored the avarice and cruelty of their

* Isendula, and what went before and after, were recent when this lecture was given.

countrymen. But these men regarded the Mexican and Peruvian worship as devil-worship; therefore they could feel no indignation at its destruction. It was a repetition of what had been done to Greek temples and Greek books in the early days of the triumph of Christianity. Of Mohammedanism, the great rival of Catholicism, there is no need to speak. There was an internecine war between them in the middle ages, and we have seen the embers of that war smouldering in the last three years. Protestantism has been no whit superior to Catholicism in these things. Our own action in India, in China, in Japan, has been always tainted with the spirit of contemptuous dislike for a religion and civilization which was not our own.

Never has there been a more striking example of this than in the present South African War. Precisely the same unholy alliance of commercial rapacity with religious zeal is taking place there now which stained Spanish history three centuries ago. "The present war is a war of aggression," says one of the correspondents of our newspapers, "begun by us under circumstances which are only plausibly defended on the score of expediency, and yet strange to say, by a large section of the missionaries as well as by a vast majority of the colonial public it is looked upon as a '*jehad*,' or holy war, waged in the interest of the spread of the Gospel, and, therefore, to be sanctified by all the company of preachers. . . . Elderly clergymen have taken the trouble to whet the popular cry for revenge by declaiming in the colonial newspapers on the enormities committed by the Zulus some forty years ago, and one reverend gentleman goes so far as to proclaim in Natal, by placard and printed notice, that 'The Lord of Hosts is with us; the God of Jacob is on our side.' . . . There can be no doubt at all

that in weighing the probability of future troubles in South Africa the missionary and ecclesiastic element must not be lost sight of." *

In contrast to this blind misunderstanding of all modes of life that are not our own, this forceful imposition of our own civilization and our own belief on populations to whom they are odious, Positivism brings before us the true Gospel of Peace. There can be no sympathy between alien races without clear understanding each of the other ; and Positivism establishes that understanding. The African fetichist represents to us, not a degeneracy from a primeval perfection caused by man's original fall and by his ignorance of the true God, but the first stage in a long journey of upward progress, along which we ourselves have already passed more quickly, and through which it will be our business to guide others whose development has been less rapid than our own. Till we can do this, till Africa can receive Positivist missionaries animated by sympathy springing from the sense of Continuity, wisely guiding the spontaneous efforts of progress without wanton destruction of the established order ; till that time can arrive, the best wish we can frame for Africa is that she may be able to defend her independence, if need be, with the best weapons that European science can supply, against the unholy alliance of European greed and proselytism.

I refer to this particular instance, not merely for its intrinsic importance and its urgency, but because it shows the way in which Positivism meets the problems of public life. To subordinate politics to morals ; to recognize in the public life of a nation what is recognized in the life of good men, that power should be used for the benefit of others, not for the aggrandisement of self,—this is our

* *Daily News*, May 7, 1879.

starting-point ; and up to this point we should, no doubt, get many good men of very various creeds to work along with us. But then comes the question, *How* to act for the benefit of others? Granted that we have a national duty towards the Zulus, the Hindoos, the Chinese, what precisely is that duty? Here it is that the distinctive principle of Positivism comes in, the principle of Historical Growth, of Continuity. We repudiate the notion that a great gulf is set between us and them by the fact that certain articles of our faith are not of theirs. We know that the life of Humanity arises from the working together of a long series of generations. The fetich-worshipping population of Africa represents one of the earlier stages of social life through which we ourselves once passed. We know that friendly sympathy and wise guidance might do much to help on the natural process of growth, and enable them to pass rapidly and without shock from their primitive condition to a level with ourselves. We know at the same time that a violent upsetting of their institutions, a sweeping away their tenure of land, or their religious reverence for the person of their king,—that most difficult achievement in the upward path of a savage tribe,—the claim that they shall strip themselves of the means of self-defence, that they shall revolutionize their laws of marriage, that they shall tolerate amongst them the presence of men whose business it is to pour contempt on all the customs that they have held most sacred,—we know that all this results in ruin and degradation, leaving behind it a disorganized and worthless mass, lingering out the remainder of their days in mischievous indolence.

There is not one of the great problems of our time on which this principle of Continuity fails to shed a flood of light. That is to say, there is no question of any kind

affecting man's life, whether it be our dealings with Eastern and with savage nations, our intercourse with Western Europe, the burning question of Socialism, the question of education, of the position of women in modern life, of the preservation of the moral law,—there is, I say, none of these problems in which we have not first to see what is the Order of Humanity, before we can make any wise efforts for Progress. The Order of Humanity exists, as we have seen, by virtue of this Continuity; by virtue of the working together of all the generations that have succeeded one to another from the earliest days until now. To whatever side of our life we turn we find that the living are under the dominion of the dead. We cannot utter the simplest thought or feeling to one another without using words that were created for us when the German, Latin, and Indian races were a single tribe, feeding their flocks in the central plains of Asia. Every moment of leisure that we spare from bread-winning work is due to the hard labour of the countless masses who have created human capital. Our science, our art, our wealth, our language, our law, our morality, are none of them our own. They come to us from a power outside us: they are the creation and the free gift of Humanity.

When we see how entirely everything within us and around us which separates us from the higher animals is due, not to our own efforts, but to the greater organism of which we are the mere agents, all the loud talk of our time about the rights of man or the rights of woman is hushed into silence. Man, as an isolated independent being, has no existence whatever, except as an imaginary mental abstraction; unless you can imagine the blossom living apart from the tree, or the eye or the hand apart from the body. No doubt the agent of Humanity, whether

man or woman, must have a certain free scope, otherwise his or her work cannot be done. There must be adequate food and clothing, there must be sufficient leisure for the higher energies of life, there must be a wide margin of free choice to act in this way or in that, otherwise the work cannot be well and worthily done. But the cry for the absolute right to independence and freedom is like the child's cry for the moon. The story that men were born free and equal, turns out, when we look well into it, to be as incredible as the wildest fables that amused our childhood.

This, then, is the doctrine round which we rally. Those who receive it will find that it is in the truest sense of the word a religious doctrine : that is to say, that it touches the three sides of life, thought, feeling, and action, and concentrates them on a common purpose. There is much religion around us, very sincere and genuine as far as it goes, which wholly fails to do this. It raises our feelings to another world, and leaves our thoughts and our actions to do as well as they can in this. Science, poetry, politics, remain outside it. It is a shelter to which men and women betake themselves when the confusion of modern life becomes too violent, and dreary, and distracting. I speak of it with the profound respect and sympathy which I feel : but a religion in which thought tends one way, and feeling another, cannot be looked upon as perfect ; and we look forward to a more perfect religious state, in which thought, feeling, and action shall have a common aim.

Those who accept this central truth, who think that it holds out the hope of bringing all the nations of the world one day into religious union, will do well to begin by putting themselves, so far as the difficulties of modern life allow, into communication with each other. We who

have addressed you belong to a group of Positivists, whose central point is in Paris, in the very house where Auguste Comte lived and worked. In other parts of Europe, in America, North and South, there are other groups also connected with the same centre.

Those who join must be ready to content themselves with very modest results ; and to work on in the faith that they are preparing the way for a better future. The immediate work, as I conceive it, is to make the word Humanity a reality to ourselves and to those around us. It is with this view that Comte prepared his calendar, in which every month, week, and day in the year is consecrated to the memory of some one among the illustrious men who have helped the common work by moral inspiration, by philosophic thought, by wise practical endeavour. One of our first objects, therefore, is to make his calendar extremely familiar to us. If we are asked, Is not Humanity a mere figment ? how does Humanity differ from any other theological or metaphysical abstraction ? our answer is, Humanity is the assemblage of these noble lives ; of these and of the countless multitude of those who have laboured for the common weal without leaving any record of their name. All that is good within us, all the good that we enjoy, comes to us from these.

When these thoughts have sunk into our hearts and have become part of the framework of our lives, they will become the inspiring source of the poetry of the future ; which with the sister-arts of music, colour, and form, is destined to react hereafter on the life of man with a force which the highest religion and the highest poetry of the past can but faintly foreshadow. Yet such foreshadowing we thankfully accept. We gaze with Dante at the mystic Rose, whose every petal was a human life made pure from

selfish earthly stain. And as Dante * likened himself to a pilgrim coming southward from the cold grey dusk of the polar region, who at the sight of Rome and her lofty structures was struck dumb with awe as the palace of the Lateran rose above the common things around him ; so, said he, was I astounded when I passed from human presence to the divine ; from the things of time to the things of eternity ; from the people of Florence to a people that was sound in mind and heart ; so, too, may we take refuge from the sordid vulgarity and venomous passion that stains the transient life around us, in gazing on the glories that have been and that shall be hereafter.

Or, again, we may sing with Shelley the hymn of the Earth Spirit, telling how Love penetrated her primeval structure, and prepared her for becoming the dwelling place of Humanity :—

It interpenetrates my granite mass,
Through tangled roots and trodden clay doth pass
Into the utmost leaves and delicatest flowers ;
Upon the winds, among the clouds 'tis spread,
It wakes a life in the forgotten dead ;
They breathe a spirit up from their obscurest bowers.

And like a storm bursting its cloudy prison
With thunder, and with whirlwind, has arisen
Out of the lampless caves of unimagined being ;
With earthquake shock and swiftness making shiver
Thought's stagnant chaos, unremoved for ever,
Till hate, and fear, and pain, light-vanquished shadows, fleeing,

Leave Man, who was a many-sided mirror
Which could distort to many a shape of error
This true fair world of things—a sea reflecting love :
Which over all his kind, as the sun's heaven
Gliding o'er ocean smooth, serene, and even,
Darting from starry depths radiance and light, doth move :

* *Paradiso*, Canto xxxi.

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Leave Man, even as a leprous child is left,
Who follows a sick beast to some warm cleft
Of rocks, through which the might of healing spring is poured ;
Then when it wanders home with rosy smile
Unconscious, and its mother fears awhile
It is a spirit, then weeps on her child restored.

Man, oh, not men ! a chain of linked thought,
Of love and might to be divided not,
Compelling the elements with adamant stress ;
As the sun rules even with a tyrant's gaze
The unquiet republic of the maze
Of planets, struggling fierce towards heaven's free wilderness.

Man, one harmonious soul of many a soul,
Whose nature is its own divine control,
Where all things flow to all, as rivers to the sea :
Familiar acts are beautiful through love ;
Labour and pain and grief, in life's green grove
Sport like tame beasts, none knew how gentle they could be !

His will, with all mean passions, bad delights,
And selfish cares, its trembling satellites,
A spirit ill to guide but mighty to obey,
Is as a tempest-winged ship, whose helm
Love rules, through waves which dare not overwhelm,
Forcing life's wildest shores to own its sovereign sway.

III

MAN THE CREATURE OF HUMANITY*

"The subordination of Progress to Order, of Analysis to Synthesis, of Self-love to Love of Others; these are the three modes, practical, theoretical, and ethical, of describing the problem of man's life, the attainment of complete and lasting unity. Here are three ways of stating one and the same question; answering to the three sides of our nature, activity, intelligence, and feeling: but so inter-dependent are these, that the three aspects of the problem are not merely connected, they are identical. Nevertheless the last of these takes precedence of the two others: since it alone touches the direct source in which the solution is to be found. For Order implies Love; Synthesis is impossible except as the result of Sympathy. Consequently unity in speculation and unity in action are impossible without unity in feeling. Therefore Religion is more important than Philosophy or Polity. In the last resort therefore it may be said that the problem of life is to bring about harmony in our feelings by enlarging social love and repressing self-love. To do this implies the subordination of change to permanence, and of the spirit of detail to large conceptions of the whole."

This is the opening paragraph of the last volume which Comte lived to write. It was a treatise on mathematics; †

* Delivered at Newton Hall, Nov. 27, 1881.

† *Synthèse Subjective, ou système universel des conceptions propres à l'état normal de l'humanité.* Vol. I. Paris, 1856.

the first of a series of four volumes, of which the second was to deal with human nature: the third with education, moral and intellectual, conceived of as continuing from birth to old age: and the fourth with man's practical work in the world.

In the few sentences which I have read lie, as I conceive, the whole essence of Comte's teaching. Rightly to understand them would ask the study of a lifetime. Yet a little time may be well spent in asking ourselves what they mean. To begin a treatise on mathematics with language of this kind, seems at first hearing, a strange arrangement of thought. What can mathematics have to do with morality? What can the opposition between broadness of view in science, and love for specialities and details, have to do with the subordination of self-love to social love? And again, this further question will be asked: Admitting that love of others is good, that order is good, that comprehensiveness of view is good, are we in the future to do without self-love, to abandon progress, to dispense with specialities and details? If so, that may be good for angels, but hardly for men; and even if good, surely impossible and Utopian. I think that the answer to these questions will lead us some way towards understanding the whole purpose of Auguste Comte's life and work; the life and work which we here, within the varying measure of our powers, propose for our imitation.

And, first of all, I dwell on the first word of the sentence which I have read,—the word *subordinate*. To subordinate analysis to synthesis, progress to order, egoism to altruism, does not mean that you replace one member of these couples by the other; that analysis, progress, egoism are to be superseded, and synthesis, order, altruism substituted; though many superficial

readers of Comte, whether disciples or critics, seem to think so. One of the hardest and rarest things—one of the surest marks of a wise, healthy, well-balanced nature,—is to hold two good things of unequal value simultaneously, and yet not to set the same value on them; to be able to say, This is better than that, and yet that is not bad, but, on the contrary, good, useful, indispensable. To subordinate does not mean to suppress; it means to give the utmost margin of free play to the lower that may be compatible with the precedence of the higher.

Let us follow out this thought in the case before us.

And first, the subordination of Progress to Order does not mean the suppression of Progress; as the principal motto of Positivism—Love the Principle, Order the basis, Progress the end—sufficiently shows. What is meant appears more clearly in the thirteenth law of Comte's First Philosophy, *Progress is the development of Order*. It is the new growth of the tree—essential, were it only as the surest evidence of the life of the tree—but not to be compared in importance to the tree itself. Yet many of the anarchists and some of the philanthropists of our day seem to think otherwise. They are always killing the goose for the sake of the golden egg. They are always trying to knock down some permanent institution of society, built up by centuries of persistent effort, because it stands in the way of some partial and temporary reform. They forget that the order of the nineteenth century represents the accumulated progress of nineteen, or rather thirty and forty centuries before it; and that by the side of this the Progress of the nineteenth century, or any other, is but a small matter. The habits, principles, prejudices which keep a quiet village community together

are the growth of ages. When for the sake of increasing the week's earnings you set up factories and ironworks without the least regard to the pre-established life of that village, we know what happens. We have tried that on a gigantic scale in Lancashire and elsewhere; and I imagine that if the industrial revolution of the last hundred years in England had to begin over again—if we could put ourselves back, now, at the time of Arkwright and Watt—that many of us would try and see that the work was done rather differently. Wordsworth from his mountains saw the revolution going on, and prophesied its results truly. He saw wholesome village life, a manly, independent peasantry, hardy, vigorous children, disappearing, under canopies of smoke, into hideous encampments of unwholesome cottages clustered round the new industrial castles where wives were drawn from their homes, and little children were imprisoned to hard labour for twelve hours a day. An enormous population has thus been stimulated into a disorganized unwholesome existence. We have partially repaired or palliated the evil by school boards, and people's parks, and factory acts. But we might have prevented it. And can we deny that there is wisdom in the instinct that leads Chinese statesmen to shrink from sudden, unchecked introduction of the same system into their eighteen provinces holding one-fourth of the world's population? They have got an order of village life, a hard-working peasantry, a system of ancient rites, and customs, and prejudices; they have their reverence for the dead, their respect for age, their fetish-worship of the sky—in short, a settled fabric of life, which when destroyed is not so easily built up. And are they not right to abide by this till they can be very sure that

the steam-engine and the railway shall not shatter it to pieces?

I must not pursue this subject. I only note, lest I should be misunderstood as a supporter of an idle, imaginary, or querulous conservatism, that one month out of the Positivist Calendar is consecrated to the heroes of industrial progress; Gutenberg, Watt, Arkwright, and their fellows. The subordination of progress to order involves no discouragement to progress. Progress is the very end we propose to ourselves. Only we contend that it shall be a development of Order, not a destruction of it; and that Order shall mean the order of the whole of man's life, not the one-sided consideration of a special portion of it.

We begin, then, at once to see that Comte is right in saying that the subordination of progress to order is part of the same problem as the subordination of analysis to synthesis, and the subordination of egoism to altruism. That is to say, Our intellect must conceive the whole of man's life: our heart must sympathize with the whole of it.

And now let us pass to the second aspect of the three-fold problem: the subordination of analysis to synthesis.

What is analysis? What is synthesis?

Analysis is the same thing as dissection: it means taking to pieces. Synthesis is the reverse process: putting together. A watchmaker separating the parts of a watch and putting them together again, performs successively an act of analysis and an act of synthesis. A botanist takes a plant, examines each part separately—its root, its stem, the way the leaves are grouped, the shape of the leaf, the mode of flowering; the calyx, petals, stamen, and pistils; the position of the seed in the ovary, the

position of the germ in the seed ; he analyses the plant. But the list of all these parts does not make up the plant. There remains the after process, which alone gives meaning and purpose to what has gone before. A poet like Göthe, who is a naturalist also, or a naturalist like Humboldt, who is also a poet, will paint the whole life of the plant, its climate, its distribution in the world, and its importance to the life of man or of animals, its work in this world, in short. That is synthesis, and that alone is the final reality. And note, in passing, that I have let fall the word poetry. For a little thought will show that synthesis has something to do with sympathy. The man who can "peep and botanize upon his mother's grave," may be a good analyst. But Burns, stopping his plough to pick the daisy, which he has immortalized, was of another mould. Not that the analyzing process is to be depreciated. So long as the dissector keeps his place, let there be no word that is not respectful of his patient labour. Anatomy is needful: the dog or horse cannot be fully understood without minute record of muscle, bone, and brain. Only let it be always remembered that the crowning process is when such a naturalist as Leroy enters with all the power of heart and mind into the actions and thoughts and feelings of the living creature, and paints them as a whole.

Take another instance. The life of a nation has many sides to it, and one of those sides is the acquisition of wealth. It is possible by an effort of abstraction to concentrate exclusive attention on the instincts which prompt man to buy and sell and accumulate, and to speculate on the arrangements which would come about if he had no other motives or instincts but these; if he were a mere buying and selling animal. And these supposed arrangements

have been embodied in a doctrine called Political Economy, which was regarded, a generation ago, as a sort of foundation of modern statesmanship. Here is an instance of analysis insufficiently subordinated to synthesis. A truer philosophy has shown us that man regarded as a commercial machine is a pure abstraction; that the life of a nation is made up of customs, laws, prejudices, institutions, hopes, and fears; and that among these the money-loving instincts play an important, but by no means always a preponderating part. Statesman after statesman has been compelled to see that this analysis or abstraction of the wealth-loving instinct is no sufficient foundation for practical legislation: that hundreds of other things, in a word, the whole multiplex nature and environment of man's life must be taken into account.

The contrast of the Irish Encumbered Estates Act of thirty years ago with the Land Act of 1881 is a signal proof of this. And note that practical wisdom is at one with the deepest philosophy of our time in this tendency to subordinate analysis to synthesis, abstraction to concrete reality. Not that the abstraction was not good and necessary in its way. The service rendered by Hume, Adam Smith, and other great publicists in analyzing the economic side of human affairs is unquestionable. Only the results of their dissection should have been kept duly subordinated to the concrete realities of the case. That this was not done is not to be imputed to them, but to statesmen led astray by the instincts and prejudices of plutocracy, who were too apt to regard these economic abstractions as precepts for practical legislation. And note further that for the rectification of their error, sympathy was needed to assist synthesis. To the common instinct of men the doctrines of Political Economy, as

preached by Lord Brougham and McCulloch fifty years ago, were as repugnant, as by the light of a deeper and broader philosophy they were found to be unreal.

I will take yet one more illustration ; which, though it be drawn from an abstruse subject, will not be found, perhaps, so difficult of comprehension as it might at first seem. I have quoted already from Comte's last work left unfinished. The first volume was, as I have said, a treatise on Mathematics ; to be followed, had he lived to complete it, by a Treatise on the Theory and the Training of Human Nature. This mathematical volume, penetrated, strange as it may seem, with human sympathies from the first page to the last, is a putting together of all the really essential truths of the science, from arithmetic to the transcendental calculus, in an orderly arrangement. It sets forth that all the methods of reasoning used by man,—not merely deductive reasoning, but induction in all its forms, from simple observation to comparison and historical filiation,—are available, and can be most usefully studied, in this region of thought. The volume is, then, what he himself called it, a Treatise of Logic. But Logic, with Comte, had a wide meaning. It was much more than the manipulation of dry and abstract symbols.

Now the greatest of all mathematical conceptions, and the most fruitful both in scientific results and in its influence on the mind, is the dealing with curved lines as an assemblage of infinitely small straight lines, the direction of each of which shows the tendency of the curve at any given portion of its course. The mode of handling these infinitely small straight lines is a branch of science called the differential calculus. And when we have analyzed the curve by means of it, when we have, so to speak, dissected it into its ultimate elements, by means of these abstract

and imaginary straight lines that we have called to our aid, we then have to perform the opposite process: we have to get rid of this artificial scaffolding, and to know about the curved line itself as a whole; how long it is, what space it surrounds, and so on. This opposite process is called the process of integration: and the modes of doing it constitute the integral calculus. After the analysis comes the synthesis; after the long wandering through abstruse algebraic formulæ, the mathematician comes back in the end to the concrete practical problem which the land surveyor, or carpenter, or tool maker, had handled before him, though not with the same unerring precision.

Now, says Comte, in one of the most remarkable passages* of the volume I am speaking of, this succession of two processes is what we do throughout the whole range of science. In the first six sciences, from mathematics to sociology, we take partial views of human nature, dissecting it into its various elements, a way which corresponds to nothing real, but which is necessary to guide us: in a word, we *differentiate*.

In the mathematical and physical sciences we find the outward conditions of man's life; his physical environment, the laws that regulate space, time, season, climate; the activities of matter, light, heat, electricity, chemical action. Biology, dealing with man as an animal, tells us of the nutritive life, of the life of sensation and motion, of the life of rudimentary intellect and feeling, common to man with dogs, elephants, or horses. Sociology deals with man's social state, handling each aspect of it separately,—family life, property, government, language; and showing the growth of each from century to century. But each and all of these points of view are partial,

* *Synthèse Subjective*, pp. 506-528.

abstract, theoretical. There remains, after all this necessary work of analysis is done, the final science, which is at the same time the final art ; the science of human nature, and the art of acting upon it. Here only do we reach the reality, the whole of our subject ; here only do we *integrate*. This, then, is the central point of the synthesis. And here, too, far more clearly than before, stands out the relation between synthesis and sympathy. Here the profoundest philosopher, at the ultimate stage of his long circuit through the paths of thought, finds himself with the same work to do that a poor peasant woman does when she strives, with quiet good sense and loving firmness, to keep her husband honest and sober, her children brave and pure.

We have seen then these two things. First, the subordination of analysis to synthesis is something widely different from the suppression of analysis. Secondly, what seems the unmeaning paradox of connecting this with the subordination of egoism to altruism, is a very real and deep truth. If in each science the worker could penetrate himself with the thought that his own little piece of dissecting work is but a small addition to what has been done by past workers in the same subject ; and yet further, that his science taken in its entirety is but a part of a larger whole held together by the central problem of man's life,—there would be a wide-spread agency at work for the subordination of egoism to altruism, the like of which the world has not yet seen. This was the subject of the appeal made by Comte as a young man to the scientific world of his time, the appeal to which he obtained so hostile a response. Those he addressed made the mistake, wilfully or unconsciously, which I spoke of before. They confounded the *subordination* of analysis to

synthesis with the *suppression* of analysis by synthesis. In other words, they accused him, Comte, the admired friend of Blainville, Broussais, and Fourier, of wishing to stifle scientific inquiry. As well say what anarchists say about the defence of Order : that it necessarily means hostility to Progress. They could not see that subordination meant, not subjection, but free play under the stimulating influence of a large and noble purpose.

We come, then, to the third aspect of the threefold problem, the most important of the three, to which the other two may in the last resort be reduced ; the subordination of egoism to altruism, of self-love to social love.

So predominant is this over the others, that for the mass of men and women it seems to eclipse them altogether. Philosophy and Politics have nothing to do with the real problem of man's heart, it may be thought. Let us leave all else, we are tempted to say, and turn to this.

This is what the mystics of the first age of Christianity did ; it is, indeed, what the mystics of all ages have done. But we know what the result has been. Brahmins, Buddhists, Christians, have gone into monasteries resolved to stifle self, and have ended too often in indolent, self-indulgent apathy. The nobler part of the religious world, whether Christian or Mahommedan, have taken a different course. They have not withdrawn themselves from men ; they have striven to act upon them. But they have done so by chaining the intellectual power, and making it the slave of social and moral needs. Throughout long centuries called, and not unjustly called, dark, although the great and glorious work done in them deserves, and will finally receive, the eternal gratitude of men, a creed was forced upon men by the urgent moral necessities of the time which, though it did not kill, did assuredly narcotize their

intellectual life. The inevitable result followed. The chains of the intellect were not gently loosened, but broken in fierce anger; and the intellect from being a slave became a rebel. Positivism teaches us that the intellect should be neither slave nor rebel, but a free servant.

To put the thing in plain words, the dream of a Religion apart from Polity and apart from Philosophy is a vain one, and can only end in painful and wasteful disillusion. Rich people with fine feelings who have no battles to fight in the world, or monks in a convent who, though nominally poor, are maintained at other men's cost—often without working—can do without a creed, as they can dispense with the life of citizens. I do not speak of the sordid and rapacious rich, but of the gentler, kindlier sort, to whom the free play of generous sympathy and poetic enthusiasm supplies all they want. Religion for many people who are well-to-do in the world, means this and little more than this. But the mass of hard-working people, whether cultivated or ignorant, need a backbone to their religion. They need the aid of strong conviction and principle in those times when hard labour and sorrow have wearied their heart, or when perilous temptations have assailed them. Their sympathy must rest on a Synthesis; their Love must have the aid of Faith.

Nevertheless, of the three aspects of the life-problem, the subordination of self-love to social sympathy, though inseparably connected with the other two, is more important than they. Philosophy, affecting as it does that small minority specially charged with the spiritual destinies of our race, exercises indirectly, through education, and in other ways, a profound influence on life. But the influence is indirect. Polity again—since all men are citizens and all women the wives, mothers, or in any case, the daughters

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of citizens,—would seem to embrace the whole of life. And it does indeed embrace the whole range of man's activity. Nevertheless, the hidden sources of activity are not reached by it. Greece and Rome show how the widest thought and the noblest political action, separately and exclusively pursued, may result in barrenness and degradation. The source of action became tainted. The heart grew corrupt. The opening paragraphs of Paul's letter to the Roman Church, though faulty in their inevitable failure to own the immense debt due to Rome and Greece, are yet true in their terrible denunciation of the mass of Greco-Roman society in the first century.

We come, then, at last to this. We have seen in a previous lecture * something of the multiplex nature of man. His brain life, like that of other animals near him in structure, is made up of desires, thoughts, activities. With him as with other animal races the first of these largely preponderate over the other two. We have seen, too, that man's desires, not being one but many, range themselves in two classes; those which are concerned with self-interest and ambition, and those which prompt the satisfaction and well-being of others. The problem of life then is to see that these diverse desires, thoughts, and activities shall work, so far as it may be possible, in harmony. And harmony implies neither democratic equality on the one hand, nor servile subjection on the other. It implies orderly arrangement, subordination, precedence. The ideal type towards which to strive is this: Action guided by Reason: Reason inspired by unselfish Sympathy; Self-love kept under control, but no

* This discourse was the conclusion of a course of lectures on the Positive study of Human Nature; and the lecture alluded to was on Comte's theory of the Brain.

wise crushed. The soldier in the intervals of battle provides duly for bodily wants ; the greatest of heroes is not insensitive to the respect of his fellows ; the loftiest saint can love the lilies of the field, or listen to the song of birds, or breathe with delight the fragrance of a summer morning. Asceticism effacing the narrower circles of love on the pretext of ranging more freely over the wider, is no object of our admiration. The health of the soul, as of the body, implies such energy of each part as promotes the energy of the whole.

But though the elements of the problem came before us in dealing with the brain of man and of animals, the problem itself is not within the compass of Biological science. That there is indeed a moral life in animals, even in those far removed in the scale of life from man, a life which, short-lived though it be, is yet coherent and harmonious, the lines of Dante quoted so admiringly by Comte are enough to show :

E'en as the bird who midst the leafy bower
Has in her nest sat darkling through the night
With her sweet brood, impatient to descry
Their wishèd looks, and to bring home their food,
In the fond quest unconscious of her toil :
She of the time prevenient, on the spray
That overhangs their couch, with watchful gaze
Expects the sun : nor ever till the dawn
Removeth from the East her eager ken.*

Yet in such life, beautiful as it is, there is no continuance. The brood grow up and are scattered, and forget whose care sheltered them from hunger and cold. For most of them some violent death, from the elements or from some stronger bird or beast of prey is at hand, and all is to begin again.

* *Paradiso*, Canto xxiii.

To found a social state capable of long continuance and wide extension, has been the privilege of man. Far back in the recesses of time, other societies perhaps strove with his on no unequal terms ; * and as they succumbed in the struggle, either fell back into precarious solitary life, or became associated with man's toil and triumph. In any case, the continuity of the social state brings wholly new conditions into the study of Life. The study of Life means the study of the relations between the organism and the environment. But for the social animal the word environment comprises not merely relations with the physical world, not merely relations with others of the same species round him, but relations with bygone ancestors who have handed down traditions, institutions, and results of every kind, material and moral, by which his whole life is transformed. Thus the continuity of the social state forms the subject-matter of a new Science dependent upon Biology, but distinct from it, and requiring its own methods of study.

Let us briefly consider the questions of which this Science treats. They fall under two heads. First, there are the permanent institutions of the social state, found in every stage of its growth. Secondly, there are the progressive changes of Society. The first may be called the anatomical side of the subject, or if we prefer an analogy from another science, the statical side. Under the second head, which we may call the functional or dynamical side, we study the various parts in their free play, and examine the laws of growth and change. In a word, we consider first the Order of Society, secondly its Progress.

Under the first head fall the four subjects of Property,

* This hypothesis was developed by Comte in the first volume of his *Positive Polity*; see pages 508-17, Eng. Trans.

Family Life, Language, Government. Under the second head, the progress of society, in Asia and elsewhere, from Fetichism to Theocracy ; and the transition in Western Europe from Theocracy to Positivism. Here, then, are seven subjects with which Sociology has to deal. A sentence or two upon each of them will mark out the field of thought more precisely, and save us from the danger of vagueness and verbiage in what follows.

1. *Property*.—All animals that build a dwelling, or that have, as is often the case, a defined range within which they seek their food, show the institution of property in the germ. Families of swans on a river *own* a given portion of it. Troops of dogs in Constantinople ranging the streets with freedom, and belonging to no masters, have invisible barriers, rigidly defined by their own convention, which they never transgress nor allow dogs belonging to other troops to overpass. Many animals collect some slight store of food, and conceal it for future use.

But man alone of the vertebrate animals accumulates from generation to generation. That accumulation is called Capital ; and its formation depends on two laws apparently simple, yet first distinctly formulated by Comte : (1) Man produces more than he consumes : (2) The product can be preserved for a longer or shorter time, but in any case beyond the time necessary for its reproduction when consumed. If corn and roots could not be stored up through a winter the formation of capital would have been impossible.

Without pursuing the subject further it is easy to see the two consequences which are of most importance for our present purpose. First, that capital in its various forms of stored-up food, tools, clothing, houses, etc., gives

leisure, as it grows, for new forms of activity, such as decorative art or religious ritual, and other modes of spiritual life. Secondly, that capital is the creation of no one man ; not even of one generation, but of the whole succession of generations. This last conclusion disposes promptly both of the Economic and of the Communistic view of Property. On the one hand Property, being social, not individual, in its source, ought to be social, not individual, in its application. On the other hand, no one generation, either by universal suffrage or otherwise, is entitled to dispose at its pleasure of the wealth of the community. In other words Capital is the creation of Humanity, and should be used for her benefit.

2. *Family Life*.—With many animal races the family tie is strong ; and Leroy,* who observed animals with the combined instincts of a philosopher and a sportsman, has left striking pictures of it. Of the two instincts on which the first origin of domestic life depends, one, the maternal, is as strong in many animals widely removed from man as in the human race. The sexual instinct, resulting in some cases in promiscuous communism, leads in others to ties of singular permanence. But in man alone the continuity of social life from generation to generation has made the family the centre of a code of rites, ceremonies, and duties, reacting in the strongest way on the development and the training of his moral life. For many thousand years the religions of the world have taught respect for parents, and have fenced the marriage tie with

* Georges Leroy, the friend of Diderot, a contributor to the Encyclopædia, and Ranger of the Parks of Versailles and Marly, published his profoundly philosophical *Lettres sur les Animaux* between 1762 and 1781. A new edition (1862) has been published in Paris by Dr. Robinet, and an English translation a few years ago was edited by Dr. Congreve.

the strongest sanction which they could give. The Decalogue of Moses is still recited in modern churches; and Moses was but the repeater of precepts and duties taught, as we now know, for centuries before him by the Egyptian priesthood.

3. *Language*.—If the social races of animals, as can hardly be doubted, communicate by voice and gesture the few thoughts necessary for combined action, it seems probable that, as with certain tribes revisited by Humboldt after an interval of many years, such language is short-lived, and has to be formed again when new occasions for it arise. In any case, the need for continuity of social life is more evident here than in any other case. As every motion is followed by expression, that is, by movement of the muscles of voice or limb, emotions felt in common lead to common signs, and become inseparably bound up in the common activity. So soon as the activity becomes continuous, the signs connected with it become so likewise, and language, in the human sense of the word, originates. It embodies for each new member of the Society the work done by the head and heart of foregoing generations. The tongue taught to each of us by our mothers is the voice of the past.

4. *Government*.—Government is the mode in which a Society brings its combined force to bear upon each member. It has been spoken of as a necessary evil; but not much thought is needed to see that it is as much a part of the notion of society as the diameter is of the notion of a circle. A group of passengers assembled at a railway station is not a Society. The most enlightened republic and the most primitive African despotism agree in the one essential that the chief officials of both represent for the time being the will of the community.

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As man is governed partly by fear, partly by the wish to find himself in sympathy with his fellows, it follows that the mode in which the community acts on the individual is of two kinds ; force and opinion. In other words, there are always two kinds of government, temporal and spiritual, which tend as time goes on to become more completely separate. The influence of Continuity in this matter, that is to say the preponderance of the Past over the Present is sufficiently obvious. The most marked feature of a civilized community is the existence of a body of Law. And Law is the mass of Governmental acts in past generations, so far as they have been unrepealed.

These four subjects, with all that ramify from them, make up the Order of Society. But we have further to consider its Progress. The principal factor in Progress has been the change in man's conception of the world around him.

1. His hopes and aspirations are first coloured by the belief that the forces of the world around him are like the storms of anger, joy, and love in his own heart. All nature is peopled by the savage with human impulses. Ancestral worship is but one among the many forms of this stage of thought ; totemism, the adoption of special animals as objects of reverence, is another ; and most important in its results of all, is the worship of the planets and of the sky ; the first mode of faith capable of welding different tribes together by objects of adoration common to all. Here, then, we have the source of the primitive religion of mankind : seen in its ruder forms in Africa, Polynesia, and traceable in the earliest life of every civilized community : in its most highly developed form still governing the vast empire of China. This form of faith, and the institutions connected with it, are best known under the

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name of Fetichism ; * an influence in the world never wholly suppressed, and entering largely into the most beautiful and sublime creations of modern poetry.

2. The worship of heavenly bodies, tending to unite scattered tribes into communities, was the chief factor in the great intellectual and social revolution, which substituted gods for fetiches, invisible agents guiding and moulding nature for the visible objects themselves. Hence grew priesthoods, the interpreters of gods' will to men ; and round the priesthood, that highly organized fabric of society called Theocracy, which proved so durable in Egypt and India, and which, but for European invasion, would have established itself over both the American continents. To Theocracy we owe not merely the hereditary aptitude implanted by caste for various forms of industry, but also what is of infinitely greater moment, hereditary instincts of social discipline. Murder, theft, and adultery had been held in check by the Egyptian priesthood for a long range of centuries before the Decalogue of Moses.

3. Western Europe is passing from Theocracy to Positivism ; from the reign of Gods to the reign of Humanity, by a long series of transitions ; beginning with the Greek settlements on the Mediterranean, carried on by the Roman Empire, and by the feudal society of the Middle Ages, and culminating in the modern revolution which, from the fourteenth to the nineteenth century has been transmuting every aspect of private and public life.

* This name, adopted by Comte from De Brosses' remarkable work *Les Dieux Fétiches* (published 1760), is better fitted to describe the whole system of thought and feeling characteristic of primitive religious belief than the words Animism, Totemism, Ghost-worship, which later writers sometimes substitute for it, but which give too specialist a view of the matter.

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Arnold was right in saying that modern history began with the Greeks. From Homer, Thales, Aristotle, and Cæsar, to Shakespeare, Descartes, Frederic, and Comte, the transition, spite of all oscillations, has been continuous : the substitution of Humanity for Divinity has gone on unceasingly. The Mediæval Church, commonly regarded as the obstacle to this change, was in truth, one of its chief, though unconscious agents. The Christ of St. Paul, and the Virgin of later centuries, were prototypes of Humanity.

And remark that as this series of changes from Fetichism, through Theocracy and Revolution to Positivism has proceeded, a wider and deeper sense of man's union has been going along with it. Solidarity, to use the Socialist phrase, has increased with Continuity. Under Fetichism Family life was organized, as we see in Africa, in China, and in the primitive history of all civilized nations. Under Theocracy we get the wider union of the Caste, joining families who followed the same occupation. Greco-Roman history developed the conception of the City or State. Catholicism, and to a large extent, Islamism also, united many states by the one bond of a common Church. And finally the scientific discoveries, industrial inventions, and wide commercial intercourse of modern times has brought man to feel the ties that bind all the inhabitants of this planet together.

Such then is the order and progress which form the subject-matter of this science of Sociology. We learn from it to recognize the existence of Humanity as a power exercising invincible control over each individual life. As little as we can place ourselves on another planet, can we alter our subjection to this power. We are born in a certain family; we have a particular language; we are

taught certain duties ; prejudices, customs, principles are instilled into us ; we are the children of one nation and of one century ; and all the efforts of our will cannot make us other than this, any more than we can leap away from our shadow, or add a cubit to our stature.

There is no question then as to the reality of this power. No one thinks that when he mentions the word England or France or Germany, he is talking of a ghost or a phantom. Nor does he mean a vast collection of so many millions of men in the abstract ; so many million ghosts. Man in the abstract is of all abstractions the most unreal. By England we mean the prejudices, customs, traditions, history, peculiar to English men, summed up in the present generation, in the living representatives of the past history. So with Humanity. The very language in which a man might seek to deny that he is the creature of humanity, is Humanity's creation.

Humanity is then the central reality for us ; the central point of thought, of activity, of devotion and sympathy. But to have a central meeting-point for thought, action, and sympathy, is to have a religion. Religion has no other meaning than the union of thought, activity, and sympathy in subjection to a power governing our individual life.

Is such a religion Self-worship ? It is strange that it should be necessary to answer such a question. Yet as two friends of mine in the course of the last month have asked it, and indeed have answered it with full assurance of conviction in their own way, it is needful to say a word on the matter. The point of the objection is that because we are members of the human race, therefore to worship Humanity is to worship self. Let us see where the misconception lies. It would seem clear on the face of it that

to live for others is not exactly the same thing as living for self. Yet to live for others is what the religion of Humanity bids us do. It would seem clear that to admire a great poet, a great statesman, a great benefactor of men in any department of life whatever, is not precisely self-admiration. Yet this is what the religion of Humanity encourages us to do. It is not very hard to see that true patriotism,—profound respect for the institutions and heroes and brave and true men and women of your country, and resolution to add your own small result to the fabric which they have reared,—is not exactly the same thing as devotion to your own personal interests; yet such patriotism is an essential part of the life demanded by the religion of Humanity. And when, passing outside the limits of that country, you extend your sympathy and your reverence to the good and the great of all times and of all places, and bring your heart and your understanding to feel and to see that the whole framework of your life is due to what they have done for you, and that the sum of your activities, concentrated on continuing this work, is but the scantiest repayment, though it be the best in your power, of the debt you owe,—is all this Self-worship? Or would it be possible so to describe the religion of Humanity with a greater capacity for inexactitude?

What explains the error is the belief that by Humanity we mean the same thing as the human race. We mean something widely different. Of each man's life, one part has been personal, the other social: one part consists in actions for the common good, the other part in actions of pure self-indulgence, and even of active hostility to the common welfare. Such actions retard the progress of Humanity, though they cannot arrest it: they disappear, perish, and are forgotten. There are lives wholly made

up of actions such as these. They form no part of Humanity. Humanity consists only of such lives, and only of those parts of each man's life, which are impersonal, which are social, which have converged to the common good.

Here, then, lies the subject-matter for the final science, that which teaches how, by the clear perception of man's relation to Humanity, to gather up the scattered fragments of his nature and make them one, like the dry bones of Ezekiel's vision which, at the Divine word, became a living soul. And note that this final Science is at the same time the final Art. It is the meeting-point of the profoundest speculation and of the noblest practical effort. The philosopher, as I have said before, after dragging the long chain of abstruse speculation through science after science, finds himself at last face to face with the practical problem urged on all hard-working and true men and women incessantly, in every time and place, from birth to death: How to guide our life? What to do?

No abstract and general solution is of much avail here. We leave generalities and abstractions; we have no longer to do with men in the mass. Cosmology, Biology, even Sociology are left behind. We have the problem which artists and poets have to handle, and which touches the heart of plain men and women and children, who have neither time nor temper for deep speculation; we have to do with the infinitely varying phases of character, individuality, circumstance. Homer tells us nothing whatever of man in the abstract: but of this man and that woman; of Hector and Achilles; and Helen, and Penelope, and Odysseus. Of the thousand characters of Shakespeare not one is the same. The whole art of Education, which our modern machinery of schools and school boards

hardly seems to touch, starts from the recognition of these differences.

How to establish a principle of unity amidst these infinite differences ; how to make men at one with themselves and at one with each other ; this is the final aim of man's effort, his ultimate problem : and the solution is to be found in bringing men to see and to feel by every agency possible, by philosophy, by science, by art, by training of every possible kind, their subordination to Humanity.

To go much further into the subject would be impossible just now. I will only ask the question, does all this teaching strengthen and enlighten man's sense of duty ? That is the test question, by which every new rule of life is to be judged. It is the question which we shall do well to ask of all systems of thought, new or old.

What is duty ? I quote the definition given by Comte's great disciple in Paris, and our teacher lately in this hall, M. Pierre Laffitte. Duty is a function performed by a free organ.

The organs of the body are bound to it by indissoluble ties ; they have no independent existence. But the organs of the body politic, while subject to it, are not thus bound to it ; they have a large measure of independent activity. A slave, suppose his slavery to be pushed to the logical extreme, can have no duty. An emancipated Russian serf said to his employer, some years ago, " When I was a serf I stole always ; it was my only right, my only way of feeling free." Positivists, let me say in passing, attach as great importance to freedom as any school of politicians now living, and very much more than most. Only it is not for them, as for some, the be-all and end-all of life. [A freeman freely acting foolishly is no object of admiration. But without freedom there can be no true virtue, as wise men have always told us.]

Duty then implies, first of all, the clear perception of man's relation to Humanity, as a free organ performing a definite function for the service of the body of which he is a member. But it implies, secondly, the inward impulse of love and reverence, urging man to forget self: and in the third place, it implies energy to carry the action through to the end. In other words, the whole of our threefold nature, made up of Thought, Emotion, and Activity, is concerned in an act of Duty. It is not merely sound reasoning; it is not merely blind benevolent impulse; it is not merely resolute activity: it is the union of all three in one. It is the first step towards that complete unity and harmony of our complex multiform nature which it is man's highest effort to attain, and which when attained, constitutes true happiness. The first step towards the attainment; but not as yet the final reaching to the goal. An act of duty implies always at the first a bitter fierce struggle between the higher and lower elements of the soul; it is long ere the victory is completely won. And only when the act has become habitual, when the victory is secure, when the lower passions, like subdued rebels, have become at last willing servants, lending their stores of force to the higher instincts whose rule they have learnt to recognize, only then is there true unity, only then is there inward peace, and such happiness as the good can feel in a world where there must always be much pain and sorrow. We come back then to Aristotle's lofty conception; happiness is the state or habit of noble activity.

But then we are told, This teaching is well enough for the few; it will be listened to by those who already practise it, and therefore do not need it: but how about the rest? Where is the sanction for your Positive morality?

I ask in return, what do you mean by sanction? Do

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you mean, where is the penalty for fear of which, or the reward for the hope of which, you do this, and refrain from doing that? If this be your meaning, I say first that Pagan Stoics and Christian or Indian Mystics have always told us that the Love of Virtue, or the Love of God, brings its own reward with it. And if you reply (as you justly may) that the mass of men, Mystic and Stoic included, even though they rise once and again to such sublime moods of devotion, yet in the daily round of life, and in its bitterer trials, need more than this : then, more than this is at hand. To the finer and purer natures in their hour of weakness, the approving glance of those they love and reverence is a source of strength. And if this be wanting, yet the trust that work done honestly and bravely will tell in the long run, will be valued by those they leave behind them, will be added in unseen ways to the treasures of Humanity, and will not be lost, is the strongest stimulus of hope ; the fear of missing this is the greatest of terrors. To "save the soul" means so to guide the life that this shall be the result. To coarser natures the disapproval of their fellow men is a moral force before which all but the fiercest audacity breaks down, even when this blame is vaguely expressed and felt ; and still more when distinctly uttered by an authority recognized by all as competent and valid, and where, as in the worst cases might be needful, it might be pushed to the extreme limits of moral or even physical isolation. Finally, for natures wholly rebellious, there remain for the society of the future as for societies of the past, the physical force of government, the strong arm of the law. No ; the want of a due sanction to morality in the religion of the Future is a criticism that will not bear the shallowest examination : rather it might be feared that the sanction would be too strong ; that it

might be abused for tyrannical purposes, as the fear of hell in past ages was abused by ambitious bigots ; were it not that in our case the very strength, or at least the permanence of the sanction ceases so soon as it should be used unreasonably.

Still again the objector argues : granted that free, willing action, in subordination to the order of Humanity, supplies a sure foundation of morality ; granted that those who have been taught to understand this long, continuous order of development that we call Humanity, will become willing to fall in with it and adjust their lives to it ; yet is not this conception very hard to reach for those who are not historians, or philosophers, or scientific students ? How touch the hearts of the vast mass of men with any fire of enthusiasm for truths, real, no doubt, and certain, but which it takes the deepest thinkers their whole lives to fathom ?

The answer lies in looking at the widely different ways there are of apprehending truth. Every day on the wide seas at noon thousands of men are using their sextants and finding out by looking at the sun and at their manuals of navigation, the exact place on the surface of the planet which their ships have reached. Yet these men are not Galileos, or Keplers, or Newtons ; nor even are they, in general, good mathematicians. They simply recognize the competent authority of the astronomers of Greenwich, and act accordingly. That is the way great truths get received and permeate the world. They are largely accepted on faith by men who find them square with their practical experience.

And again, the mistake of the objector lies in supposing that words and the abstract signs of reasoning form the only mode, or the chief mode, of penetrating men with the

conception of their continuity with the Past. But this is not so, or will not be so. Let us take a glance into the Future, remembering Shakespeare's word that to look after as well as before is the privilege of man. Let us try to imagine some of the great public festivals that Auguste Comte has foretold for the Future of Humanity, so soon as by inward meditation, by careful training of children by Positivist mothers, and by hard, continuous work in propagating a broader and nobler standard of thought and feeling throughout Society, a sufficiently large public is prepared for them, to give them the spontaneity without which they would be empty pageants.

Take the four festivals marked out for the month dedicated to Fetichism ; the festivals of Animals, of Fire, of the Sun, of Iron. Think of the splendid career opened out to the Berliozes and Wagners of the Future, to painters, sculptors, builders, decorators, as, in due subordination to the poet, they celebrate each in their own way the painful struggles of early man. What a subject for art is man's rivalry with other races, his final victory, and the elevation of the dog and horse from fierce enemies into willing and noble servants ;—or again, what scope for imagination in telling of the humble unknown Prometheus, who brought fire among men from the earth and from the sky, and by the aid of this subtle spirit gained access to the hidden virtues of plant and rock. What a theme for poet, artist, and artificer, is the festival of Iron, celebrating the long struggle between the ploughshare and the sword ; noble rivals, each with their own great work to do, but the nobler and the humbler finally victorious. And the festival of the Sun ;—how it would unite the earliest devotion of Sun-worshippers with the most recent revelations of

science! since for modern no less than for ancient the sun is the fountain of life and energy. Passing to another theme, think what vividness and what reality the Feast of Salamis would give to the splendid struggle which saved for mankind the inestimable treasure of Greek science, philosophy, and art; without which Thales, Pythagoras, Æschylus, Phidias, Aristotle, Archimedes, would be unheard or unborn names for us. I give these as isolated instances; but imagine the time when the eighty-one festivals, glorifying the most precious possessions of Humanity and the noblest work of her servants, shall bring the whole beautiful story before the hearts of men, not in printed books or lectures, but in song and music, in sound and colour and form, with all the resources of artist and skilled artificer no longer wasted on luxurious decorations of noblemen's and tradesmen's palaces, but devoted to the public service of the whole united people; and I ask, would not the religion of Humanity call forth devotion as real and as heartfelt as when the mystic veil was borne by white-robed virgins to Athena's shrine, or when the worshippers of Corpus Christi in the public squares of Seville and Toledo listened and looked at the sacred dramas of Calderon?

It is needful to think of such things; although we know well that as we leave this room to-night we shall pass within a few yards of many haunts of misery, and sorrow, and degradation; for we are bound to know this, and never forget it, and do what we can to better it. Our work lies in the present, not in the golden, glowing future. Yet hope and heart would fail us were we not to feel that we are one with that Future, as we are one with the glorious Past.

It is not then impossible, on the contrary it will be easy

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in future times, even though now it be hard, to penetrate all men, women, and children born upon this planet with a vivid operative belief in Humanity as the power supreme over human life. The belief will spread, because it is real and true ; because it gathers up our scattered thoughts, activities, and feelings, round a common centre ; because it stimulates new effort for perfection without sacrificing the Order which is our heritage from the Past : because by reducing the warring elements of the soul to harmony, not crushing the lower, but leading them to serve the higher, it helps men to reach that inward peace which passes understanding.

IV

LOVE THE PRINCIPLE *

[EDITOR'S NOTE.—The first portion of this lecture was not written out in full. The notes show that the lecturer began by taking the term "love" in the widest sense, in which we can speak of "love of money," "love of fame," &c. This brings him to the account of love given by Dante in the seventeenth canto of the Purgatory.] . . .

. . . IN that canto Dante led by Virgil had passed half-way up the mountain of Purgatory. Of the seven sins or infirmities to which man is prone he had been purged of three—Pride, Envy, Anger. There remained the three final stages in which, first, Avarice, then Gluttony (including, of course, indulgence in drink as well as meat), and, finally, unlicensed sexual desire, were to be uprooted. Pride, Envy, Anger, Avarice, Gluttony, Lust. But between these two groups came one which completes the list of seven; Luke-warmness; failure to love; apathy: and this one leads Dante to place in the mouth of Virgil a long and most profound discourse on the nature of love, a discourse in which the whole meaning and purpose of this division of the poem is explained.

"Neither creator, my son, nor creature, lived ever without love; love issuing from natural impulse, or from the spirit, and that thou well knowest. That which is natural is always

* A lecture addressed to the Positivist Society, Oct. 14, 1888.

true and unfailing. But the other kind may err either from a wrong purpose, or from too little strength, or from too much. So long as it is well guided towards higher things, and in lower things is well measured, so long can it never be the cause of evil delight. But when it is warped towards evil, or when it turns towards what is good either with more zeal than is befitting, or with less, then it is that the thing created works against him that created it. From this mayest thou understand that Love must needs be in you the seed of every virtue, and also of every action that deserves punishment. Now, since Love can never turn his face away from the welfare of him who is the subject of it, from hatred of self all beings are free. And since no being can be conceived as separate or standing apart from the Primal Being, therefore from hatred of God all affections are shut off. It remains, if rightly I measure my argument, that evil that is loved is the evil of our fellow-man, and on your miry earth this perverted love grows in three ways. [Note this very important admission made by Dante. The sphere of wrong-feeling and wrong-doing is the social sphere. Self is excluded, God is excluded. To hate self, to hate God, are two things incomprehensible and inconceivable.] Some there are who hope for excellence by subduing their fellow-man, and for this reason solely thirst to bring him down from his high seat; [*i.e.* not because they wish ill to their neighbour, but because they wish power for themselves. That is the taint of Pride.] Some there are to whom it seems as though power, grace, honour, fame would be lost if another rose to a higher place, whereat they grieve so that they long for his downfall; [the taint of Envy.] And some there are that for wrong done them are so eaten by shame that they make themselves gluttonous of vengeance; such a one must needs be eager for another's ill. Such is the love of evil in its three forms; and for this penitence is done in the circles of the mountain which lie beneath us. Now, I would have thee understand the other kind of love, which tends towards good, but in distorted ways. Each one of us darkly apprehends some good in which the soul may find rest, and this he desires; this, therefore, each one strives to reach. If his love be sluggish either in seeing it or in striving after it, on this fourth circle, if

he have duly repented, penitence is done. Other good there is which makes not man blessed. Blessedness it is not, it is not the essential good, fruit and root of all other blessings. The love that yields itself to these things too strongly is bewailed in the three circles that yet lie above us: how it is divided between them, I say not as yet, in order that of thyself thou mayest see the matter."

These three circles were those given to avarice, gluttony, including, of course, drunkenness, and lust.

Here, then, we have the scheme of Dante's Purgatory, turning entirely upon some one of the perversions of Love. Love of evil inflicted on our fellow-men, in Pride, in Envy, in revengeful anger; love of inferior good pushed too far, taking one of the three forms of Avarice, Gluttony, or Lust: and midway between these two groups we have the sin of Accidia, love of the highest things grown luke-warm, torpid, and cold.

I think this whole conception of Dante is full of the deepest meaning. And without further comment on it at present, I will call attention to this remarkable doctrine of Accidia, slothfulness in high aspirations, as one of the seven sins to be purged with purgatorial suffering, as marking perhaps more sharply and decidedly than any other thought to me, the new departure brought by the Catholic Church into the Western world. I search the writings of the great teachers of humanity, what remains of the old theocratic teaching newly unburied from Egyptian tombs and unravelled from Assyrian tablets. I read the books that Confucius rescued from times long before his time, and his own teaching as faithfully recorded by his disciples. I gather up the golden dust of Pythagoras, and listen to Socrates as he talked to philosophers like Plato, or to plain men of the world

like Xenophon; and in the works and words of all these men I find incitement to duty, to discipline, to forbearance, to courage, and to resignation. But not the fervour of Love: not the enthusiasm of Humanity: not the passion of Sacrifice. These other things lie at the very root of the tree of life. That tree can bear no noble fruit without them. There came a time when the Christian Church took to disregarding them, when it could allow such doctrine to be put forward as we see officially recorded in the most authoritative way in the thirteenth article of the Church of England—namely, that works done before the grace of Christ and the inspiration of His Spirit are not pleasant to God . . . “yea rather, for that they are not done as God hath willed and commanded them to be done, we doubt not but they have the nature of sin.” When the Christian Church sank into a depth of bedimmed folly such as that, nothing remained but such vehement onslaughts as Voltaire and his friends hurled upon it. But it was not always so. It was not so with Dante. In his wonderful vision of the procession of the Church depicted as a triumphal car with Beatrice as the impersonation of the true faith seated therein, four maidens are described as dancing on the left; three on the right. The first are the four virtues commonly known as Cardinal—Wisdom, Justice, Fortitude, Temperance. These are the Romano-Greek or pre-Christian virtues. And the three on the right are the virtues commonly called Christian—Faith, Hope, Love; “and the greatest of these is Love.” It is Dante’s broad and deep conception of Christianity, I would rather say of the Christian Church, not as something wholly separate from the ancestry of Greece and Rome, but as something built upon the foundation of Greece and Rome, which raises

him so far above other Christian writers either before or after him.

I repeat then that infinite light is thrown upon the word Love in the highest sense of the word, the sense in which Plato did not use it, but in which St. Paul and St. Francis and Auguste Comte did use it—by this picture in Dante of the fourth circle of his Purgatory in which penance is done for Love grown cold. In each circle of the Purgatory as many of you know, voices are heard and images are seen which symbolize the special virtue and the lapse from it. The spirits that are purifying themselves from the sin of slothful and lukewarm Love are depicted as running eagerly to and fro lest time be lost. And as they go the voices cry. "It was in haste," they cry, "that Mary fled to the mountains." And again the miraculous energy of Julius Cæsar is spoken of: especially his energy after the battle of Pharsalia which seems to have struck Dante's imagination peculiarly, as he recurs to it again in the "Paradise." The voice cries, "Cæsar to subdue the African rebel, struck first at Marseilles, and then rushed through Spain." No mystical quietism here, you perceive; no inert contemplation as of a hermit in the desert, or Stylites on his pillar—but highest ideal of Desire followed with fierce energy.

And again, see this infirmity of slothful fulfilment of an Ideal carried to the point of utterly hopeless stagnation and apathetic despair, in the well-known passage of the *Inferno*. When Dante has passed through the hopeless gates of Hell, but before he has begun to sound its depths his ears are bedinned by discordant cries and hideous voices, shrill and hoarse; and at last in the gloom he discerns vast troops of naked forms, stung by gnats and wasps, flitting aimlessly over the miry soil. And Virgil

tells him that these are the wretched souls that in their life on earth deserved neither blame nor praise. They are mingled with that caitiff crew of angels who neither joined the rebels nor yet stood faithful to God, but were for themselves. Heaven drove them forth not to be defiled by their presence ; nor yet will deep Hell receive them, lest her guilty ones should seem honourable by their side. They mourn because they cannot die, nor hope to die : and their blind life is so vile and low that they envy every other lot. "They never were alive," he says again ; "they are hateful to God and to the enemies of God ; speak not of them any more ; look, and pass on." One only of this miserable multitude is singled out, and even he is not named ; but simply mentioned as the man who through cowardice made the great abdication. There is little doubt who is meant here. It was Pope Celestine V., a monk of blameless life, the sort of man whom many would have called a saint. He shrank from the strife, and abdicated his office. The ambitious Boniface VIII. whom Dante regarded as the traitor to whom the downfall of the Catholic Church was due, filled his place. Not because Celestine was unambitious and desirous of leading a life of piety and prayer, not for this is he blamed ; but because, being placed by God and the Church in a post where he was the sole bulwark against the Church's worst enemy, he betrayed his trust, and deserted his post, for this it is that he is withered by Dante's scorching scorn.

Now Love in this Christian or Dantean sense of the word, this fervid striving after the Ideal, was something new in the Western world. It came with the Catholic Church ; and if I seek to trace its origin to the furthest point at which it becomes visible, I have to go back to the prophets of Judæa, who rose up so mysteriously in a little corner of

the Mediterranean in the eighth and seventh centuries before Christ, to make their protest against a dull mechanical and most unpromising ritual that only served as a cloke for organized hypocrisy and corruption, and to proclaim by word and deed their hunger and thirst after righteousness. As a man may take dust and ashes and transmute them in a fiery furnace to translucent crystal, so did those men transmute their pitiful tribal god Jahvéh, the god revelling in the smoke and the fat of roasted cattle, into the God of purifying fire, hating iniquity, and loving mercy. In Amos, the herdsman of Tekoa, in Hosea, the son of Beeri, in the first and the second Isaiah, and in the nameless singers that followed them in later centuries, that were well content to let their mystical poems pass under the name of David, the wild fierce chieftain who centuries before had raised them from a tribe into a nation,—in the long succession of these remarkable men, ending with John Baptist and Jesus of Nazara, I find something new, the seed of a new growth, a new moral species so to speak, unknown to Confucius, Pythagoras and Aristotle; I find, that is to say, not merely what Greek thinkers had taught and Roman heroes practised, the stern determination to do a man's duty, cost what it might, I find beside that the fiery glow, the zeal for sacrifice, the craving thirst for justice, which inspired the great Roman citizen of Tarsus, which kept alive the practical energies of St. Benedict, St. Bernard, St. Francis, and a countless roll of mediæval saints. It passed from them onward to modern heroes who cared little or nothing and often far less than nothing for the dogmas which the saints had held so dear. It sustained the courage of Giordano Bruno at the stake, it roused the splendid genius of Voltaire to redeem the name and defend the family of Calas. It animated the

unhappy yet noble aspirations of Russian nihilists, and forced forth the cry of *Vive l'Humanité* from Millière's dying lips.*

I think it very likely that those here present who have either left the Christian Church, or who have never belonged to it, and probably most of us belong either to one or the other of these two classes, may have been thinking that I am taking an exaggerated view of what is due to Christianity, and that I am falling back into the old way of regarding it as something unique, standing alone, insurpassable, the central point in the world's history towards which the future and the past alike converge. This, however, is not my innermost feeling, is not at all what I mean to convey. What we commonly call Christian feeling, the Christian spirit, that which distinguishes the Western world from the African and the Asiatic world, is the result of a very large and complex assemblage of influences, of which the whole series of Roman and Greek traditions form the largest part. Roman patriotism enters into it, Greek thought and imagination enter into it: the temper of our ancestors in the physiological sense of the word, the Celtic races, and the Teutons and the Norsemen who followed them, counts also for something: but in science, in art, in law, in social intercourse we are essentially the children of the old Romans penetrated with Greek culture during the centuries of the Empire. But while admitting all this to the full, and zealous as I am that it should be dwelt upon far more emphatically than it has ever been dwelt on hitherto, yet it would be stone blindness to ignore the remaining element without which neither the Mahommedan nor the Christian world would be what it is.

* A French republican, executed after the fall of the Commune, May, 1871.

This mighty fabric of Romano-Greek civilization eighteen centuries ago was pierced through and through, as by a stream of continuous lightning, by the passionate fervour of the Hebrew prophets, from Isaiah and Amos, and the long chain of mystics who wrote the Psalms, to the Baptist and the Jew of Nazareth ; the man who established the contact between the Roman world and this electric stream, being the Jew-Roman, Saul of Tarsus, the founder of the Catholic Church.

We are so much in the middle of the tremendous evolution, the greatest that can ever take place in the life of man on this planet, involved in the transition from supernatural to human religion, that, in judging of the last phase of the old faith—that in which we, most of us, have been brought up, against which many of us revolted, and then again which we found it hard to quit—that very few, perhaps none of us, are capable of holding the balance fairly. I know hardly any of Comte's disciples—for I make no pretension to except myself—who seem to me to do so ; and I have to go back to Auguste Comte himself, who always maintained that the Catholic defenders of Catholicism had themselves fallen far short of the truth in their appreciation of its services to mankind in the time of its full vigour ; and who, while unsparingly denouncing the hypocrites who played on superstitious prejudice for selfish purposes, yet believed that the fragments of the old faith still subsisting would long continue to give useful shelter to those who were not in the front lines of human progress, and yet further, to give to those who were in those front ranks many a useful lesson for the building up of the Church of the Future.

Do not let it be supposed that in speaking of the Hebrew prophets and psalmists from Isaiah to Jesus, as

something unique, exceptional, standing alone, I am therefore making any concession to the theological view of human destiny which measures the course of events by their nearness to or distance from the birth of Christ, instead of looking forward to continuous progress. I believe Judaism, or rather the Jewish prophets of the best period, to be in some ways quite unique, unapproachable. But then all the greatest things in the world seem to me unique. The sculptures of Phidias and those about him are unique. The poems of that extraordinary minstrel whom we call Homer are unique. No other ballad-maker before him or since has moulded the faith and the ethics of a nation, and left his stamp on the forms of artistic creation in all nations for tens of centuries. Roman conquest, government, and law, as represented by Scipio, Cæsar, and Trajan, are unique also. Dante is unique. Why, then, should we care to deny that the fervid zeal for righteousness which kindled the lips of Hebrew prophet and psalmist was, like Greek art and Roman law, a new influence in the world, and like them will abide, though under new forms, in the world for ever?

Having thus pointed out the part of Love, in the Christian acceptation of the word, an influence which, as Dante throughout his great poem sorrowfully acknowledges, was unknown and unshared by Greek thinker or Roman hero, we have now to ask in what sense the Positivist uses the words, "Love is our Principle."

Let us recall the various meanings of the word Positive. They are seven in number—seven notes of Positivity—*real, useful, certain, precise, organic, relative, sympathetic*. For a doctrine to be positive it must deal

with real things; it must deal with them in a useful way: it must say true things about them; it must present those truths in a precise, definite shape: it must regard them as parts of a whole, helping to build up a general faith as deep and wide as human life itself: that means it must be *organic*, constructive. It must not pretend to state the truth absolutely: it must be capable of extension, of growth, expanding as time goes on, and circumstances change: that is to say, it must be relative. Finally, it must appeal directly or indirectly to the hearts of men as well as their heads. It must be capable of letting the flame of enthusiasm play round about it: it must be sympathetic. Those who know how Comte conceived of the most abstract truths of mathematics, how his great disciple Pierre Laffitte still teaches them, know that there does not exist a truth in the whole range of Positive Science from arithmetic upwards in which the teacher really worthy of his subject cannot and will not transform it, infuse the breath of life into it, and make the dry bones live, by an appeal to human sympathies. Who, for instance, would not be readier to understand and to retain the great discovery of Archimedes that the sphere was two-thirds of the cylinder of the same diameter and height, by the recollection that it was engraved by his own desire on his tomb, that tomb which two centuries afterwards a certain highly cultivated Roman commissioner, Marcus Tullius Cicero, found after long search, and reverently cleared away the weeds that had overgrown it?

Now, then, apply these sevenfold aspects of the word to the matter in hand. Bear in mind what the problem was which Auguste Comte set before him nearly seventy years ago. Penetrated deeply with the two great intellectual forces of our time—the scientific spirit and the

historical spirit—with his moral nature glowing at every pore with social sympathy, what he had to do was to bring those three things into contact. He knew, from early training and from historical study, what Catholicism had done to guide and control men's passions, from the time of St. Paul to the time of St. Bernard. He saw why Catholicism had failed: why the French Revolution had failed. The first had had a coherent doctrine which had decayed, the second had never had a coherent doctrine at all. If any new method of controlling the aberrations of passion was to arise, if the nobler forms of Love were ever again to assert their supremacy over the lower forms, whether natural or perverted, that method must be real, useful, certain, definite, organic, relative, and sympathetic. In other words, it must be positive. Observe that in all this Comte stood utterly alone. Others before him had tried more or less successfully to bring science into touch with Politics. But none before him, and, so far, none after him, have brought it into touch with a problem far deeper and more intricate than the problems commonly called political: the problem which the Catholic Church has regarded as exclusively her own, of governing the passions of the heart.

Let us test the result.

Is the love of which Positivism speaks, Real? The love of which Positivism speaks is simply that of which all the world speaks, has spoken, and will speak till the end of Time. The love that in one or other of its forms, noble or perverted, fills the pages of every dramatist, every poet, every novelist; and does so because of the part it plays in human life which these artists are striving to portray more or less successfully. Read Cook's *Voyages*, or the record of any other unsophisticated

tribe; read the newspaper diaries of our police courts, scratch the surface of civilization at any moment of its long history, you find everywhere the seething cauldron of human passions noble or ignoble, the passion called, in the more special sense of the word, Love, not the least prominent among them. It is not a product of civilization: not peculiar to the human race: you find low down in the scale of animal life the raw material of all these passions: the passion that unites the sexes, the passion that drives the mother to sacrifice herself for her young: some rudiments you find also of the wider social instinct that brings tribes together and creates nations. Love then is *real*: some have said there is no other reality in the world.

Is it *useful*? We may leave the Darwinians to answer this. Long before Darwin's book appeared Comte had spoken in detail of the immense advantage enjoyed by the social races in the struggle for supremacy. So great is this that among insects many of the solitary species having outward covering similar to those of bees and wasps, are believed by naturalists to profit by this resemblance, and to survive by virtue of being mistaken for their social neighbours. Throughout the whole history of civilization the tribe that has the greatest fund of comradeship, of loyalty, of patriotism, will have the advantage over rival tribes where there is less of this moral cement. On the utility of human Love I need not enlarge.

Is the Positive doctrine as to Love *certain*: admitting Love to be the most potent of real facts, is Positive teaching with regard to it true? That is too long a question to answer here and now. We are concerned to-night with one sole aspect of the matter, namely that

affection, purified or unpurified, narrow or wide, is the principle of action. Intellect is not the principle of action. The Intellect is, has been, always must be, subordinate to the Heart. The Intellect, as Aristotle long ago said, is not a motive force. The Heart is. As to the different kinds of affection, as to the subordination of the lower kinds to the higher, not crushing the lower, but elevating and strengthening the higher—as to all this Positivism must be left to speak for itself. I believe its teaching on this matter to be *certain*.

Is it *precise, definite*? Contrast it with the teaching of the theologian. In the Church Catechism, the child is taught, "Thou shalt love the Lord thy God with all thy Heart." How well I remember the sense of dreary, unutterable vagueness with which these words filled me as a child! How could I love a Being invisible, incomprehensible, infinitely wise, infinitely powerful, infinitely just, and good? Children strive and strain at this, and try to persuade themselves that they succeed: but they fail, and know that they fail. Whereas how clear and definite by comparison, that is to say how positive, was the second table of the Law. Thou shalt honour thy father and mother: thou shalt not bear false witness against thy neighbour: thou shalt not covet: thou shalt love thy neighbour as thyself. I need not stop to say that in the old theocracies, as in the old Fetichism, as in the old Polytheism, and in the Catholic Church, Positive truth underlies the surface everywhere. Positive truth was not invented, as some seem to suppose, by Auguste Comte. It is just as old as Humanity herself: only it is ever growing.

But the teaching of Auguste Comte goes much farther in preciseness than the teaching of the old theocracies. We are sometimes told by our critics that the word

Humanity is as vague as the old word God. And so it is, if used in the superstitious way in which some disciples of Auguste Comte (very mistaken disciples, as I think) have used it. There have been invocations to Humanity as a great power which read just like one of the Collects out of the Prayer-book, with the word "God" left out, and the word "Humanity" put in. This reminds me of the way in which Gall's wonderful researches on the brain and observations of living animals have been travestied by his disciples under the title of phrenology, so that for half a century Gall's name became a reproach in the ears of most scientific men. With these invocations to Humanity we here have nothing to do. This is not Comte's way of looking at the matter. We do not mount all of a sudden to this notion of Humanity. The child begins, as the race began, with the simplest element of the collective organism, the Family. We say Live for Others, the Family, the Country, Humanity. Between the Family and the Country there come many intermediate ties—the neighbourhood, the village, the county, the province. The Scotchman holds his local patriotism untouched by his British patriotism. So does the Welshman: so one day will the Irishman. Again between the Country and Humanity there are intermediate ties. There is for us in Europe, and the two Americas, the common bond of Western civilization and the Catholic Church. So that the Positive conception of Humanity is extremely definite. It is the widest of a series of concentric circles, of which the love of those nearest and dearest to us is the central point. Bare Cosmopolitanism is utterly alien to us. Citizens of the world we are, but first we would be good citizens of our state; and before that we strive to be true to the instincts and the sacred traditions of home. I say, then,

that the Love of Humanity has the fourth Positive note : the note of precision.

What shall we say of the last three of the seven notes ? Is it not *organic* ? It is no vague mawkish sentimentality of which I have been speaking to-night. I claim for the Positive conception of Love that it is something solid, substantial, fit to build upon : or rather, to change my metaphor slightly, it is something to build *with* : it is the moral cement which holds together a mighty fabric. We want other things besides Love in our life : we want Light, we want Energy. Light for Order ; Energy for Progress : but Love is the starting-point. The Positivist doctrine as to Love is therefore organic : it is edifying : it helps to build up.

Again, our teaching is Relative : *i.e.* it holds out no pretence to absolute perfection. This is so in the case of the Family ; parents, children, wife, husband, brother, sister, are loved and honoured without the slightest illusion as to their being blameless.

It is so in the case of the State. Those who love their country best are often those who are most keenly alive to their country's faults : most unsparing in denouncing them. No one doubts Dante's love for Florence : yet how bitter are the onslaughts on her shortcomings throughout his poem.

Finally, it is so with Humanity. As with the Family, as with the State, so with the highest object of our reverence, Humanity—the assemblage of all lives, both in the past, present and future, who have in any way contributed towards the Service of Man. There is no absolute perfection here. This is no bar to our reverence and Love. Here, as in every other department of Positive thought, our teaching is Relative not Absolute.

We come lastly to the final note of Positive doctrine ; it is instinct in every part of it with human sympathy. We have been dealing to-night with the central point of the Positive Synthesis, which is sympathy itself, sympathy with the past and future destiny of Man. Round this central point all the other truths which we care to know range themselves in natural order. All the artistic creations, all the scientific discoveries in the last three thousand years are for us so many facts in the life of Humanity. It is impossible to avoid contrasting our way of looking at Life and the world with that known as the Evolution - philosophy. In one sense Positivist and Spencerian are alike Evolutionist. We believe in no miraculous vicissitudes ; evolution, as Comte said long before Darwin or Spencer began to write, has finally and for ever taken the place of creation. But the difference is this : and it is a very vital one. We make no pretence to know the evolution of the Universe, we care only to know the Universe in its relation to Man. Note this also. To the Darwinian the history of life on this planet is the history of internecine war, of eternal hate. Love for the Darwinian evolutionist is a sort of happy accident, which gave some advantage in the struggle for existence to those families and tribes who first acquired it. This is their hypothesis, one which from its nature is utterly impossible to prove or disprove : for no man will ever enter into those inscrutable abysses of time when Love is first found. In such obscurity we for our part prefer to trust rather to the imagination of the poet than to the unstable and undemonstrable conjectures of the Savant ; to trust rather to the beautiful inspirations of Shelley's *Prometheus* than to a crude application of Malthusianism as a complete and sufficient explanation of facts of which we have not, and

never can have any direct knowledge ; we accept the sublimer conception of Comte's latest work, that the principle of Love has been ever in the world, brought through much painful struggle to become incarnate in the latest birth of Time, Humanity.

V

SOME GUIDING PRINCIPLES IN THE PHILOSOPHY OF HISTORY*

My purpose in introducing this subject is not that I should bring it before you as a set of complete dogmas; on the contrary, I wish to bring it before this Society as an object of study, for which there is a mass, not merely of detailed information, but of principles which are not yet fully worked out, and which will progress exactly in the same way as those of the other sciences, physical or biological, in the course of the next hundred or two hundred years. I use the expression "Philosophy of History" as the equivalent of the expression social dynamic, as opposed to social static. And I begin, for the sake of clearness, by quoting Stuart Mill's definition of these two branches of research, as given in the tenth chapter of the sixth book of his *System of Logic* (p. 501, 3rd ed.)—"Social dynamics is the theory of society considered in a state of progressive movement, while social statics is the theory of the consensus . . . as existing among the different parts of the social organism; in other words, the theory of the mutual actions and reactions of contemporaneous social phenomena; making provisionally, as far as possible, abstraction

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for scientific purposes of the fundamental movement which is at all times gradually modifying the whole of them."

Though for the purposes of abstract theory these two aspects of sociology must be looked at separately, yet they have in practice to be used in combination. "We have to combine," I again quote from Mill, "the statical view of social phenomena with the dynamical, considering not only the progressive changes of the different elements, but the contemporaneous condition of each, and thus obtain empirically the law of correspondence not only between the simultaneous states, but between the simultaneous changes of those elements."

He thus proceeds to point out that we are much helped in this difficult process of observation and comparison by the fact that there is one element in the complex existence of social man pre-eminent over all others as the prime agent of the social movements. That element is the state of the speculative faculties of mankind, including their beliefs concerning themselves and the world by which they are surrounded. To speak of man's speculative faculties as the most influential agent of social movement seems at first sight a paradox. Of all the functions of the brain, the intellectual functions are intrinsically the feeblest. Speculative processes appear to hold a very secondary place in the lives of the mass of mankind. Affections, practical activities, fill a far larger place in each man's individual life; are more continuous and more strenuous. Yet the paradox is soon resolved. Though men may not desire knowledge yet they desire the gain, fame, comfort and power which knowledge may bring. And passing from individual to collective life, the case is much stronger. Men are united by common convictions and beliefs. Thinking together, they act together; acting together, they

are stirred by the same emotions. The word of command issuing from a single source spreads from general to officer, from officer to men ; and thus determines the explosion of gigantic social forces. So it is that in a philosophy of history we have to consider, first of all, the changes in the opinions and modes of thinking of society.

Mill admits, of course, as every one must admit, that the speculative element does not stand alone as the initiator of social change. There is action and reaction. But on the whole, at each successive period, he thinks it may be shown that the social change was mainly an emanation, not from the practical life of the period, but from the previous state of belief and thought. The order of human progression in all respects will mainly, or at least very largely, depend on the order of progression in the intellectual convictions of mankind, that is on the law of the successive transformations of human opinion.

Supposing this to be granted, the question remains : Can this law be determined ?

Mill gives a qualified approval to Comte's well-known law of the stages through which all our conceptions tend to pass ; observing that it has that "high degree of scientific evidence which is derived from the concurrence of the indications of history with the probabilities derived from the constitution of the human mind." He further remarks that it sheds a flood of light upon the whole course of history, by connecting these three states, and the modifications of each of them with the correlative condition of the social phenomena. Briefly stated, the law is that man's views of the world in which he lives begin with anthropomorphic fictions and end with scientific laws ; begin with explanations of external nature, or of such

parts of it as interest him, based on attribution to it of the passions and affections of which he is conscious within himself, and end ultimately by studying the natural order according to which the processes of the world go on. Of the various intermediate stages of this evolution we need not speak at present. Nor need we discuss whether the first insight into this law was due to Vico, to Hume, or to Turgot. It is enough that overwhelming evidence has been accumulating in its favour since the time when Mill wrote of it.

I have spoken of the distinction between social static and social dynamic. We must bear in mind that the second, though it has to be looked at and studied separately, is yet entirely dependent on the first. Progress is the development of order. Each of these two departments of the science brings into prominence special methods of its own. Much has been said of the importance of classification as a method of sociological research. Our secretary has already called attention to an important paper by Steinmetz in the third volume of Durkheim's *Année Sociologique*, in which many systems of classifying human societies are set forth. The vast subject of anthropology, for instance, restricting this word in accordance with present usage to the study of primitive man, can but be studied in this way. Such classification, proceeding on the plan of grouping objects according to their natural affinities, is like that of the botanist or zoologist, in two, or indeed three dimensions.

I allude to it only for the purpose of emphasizing the point that social dynamic—the philosophy of history—studying filiation; that is to say, the mode in which each generation follows from the preceding has to follow a somewhat different course. Studying continuity, we have

to limit ourselves to the field where a continuous historic record is to be found.

At first sight it might seem that there were several such fields, and that much might be gained by comparing them. There is the history of India, the history of China, the history of Egypt, of Babylon and Assyria ; these last now in the very act of revelation by the researches of the last half-century. No member of a sociological society can seek to underestimate the far-reaching significance of these and similar researches. As affecting our judgment of the initial stages of historical evolution, they are of the greatest moment. Nevertheless, to the problem immediately before us, the study of social continuity, they can only be of subsidiary importance. For in these cases either there are vast breaks in the record ; or else from various causes, some assignable source at present unknown, the development has been arrested ; or if not arrested, has been so slow that the stage reached is not comparable with the most advanced stages of Western civilization. This last case is well illustrated by China.

Our principal attention, I do not say as sociologists, but as students of that department of sociology entitled Philosophy of History, has thus to be concentrated on the recorded history of Western civilization during the past twenty-five centuries. We have to trace the line of this civilization in direct descent, the *orthogenic* line—to employ a word of which our chairman has made admirable use. We may follow that line downwards in the order of time, from older to more recent ; or, on the other hand, beginning with what we know best, our own time, and analyzing its elements, we may trace them upwards so far as may be possible. Both processes will be necessary. But in either case our first endeavour must be to grasp the series as a

whole, or so large a portion of it as we may; postponing for the present minute examination of the parts. This seems to most historians a paradox, and a very distasteful paradox; especially at the present time when division of labour in all departments, and not least in historic studies, has been carried farther than ever. It would ill become a student of the philosophy of history to underrate historical specialities. Nor is it needful to enlarge on the exceedingly obvious truism that without history there can be no philosophy of history. History needs no defence. Apart from philosophy of any kind, the dramatic splendour of the record, the clash of vivid personalities, the tragedy of human life that it unfolds will always carry history far beyond the need of apologists. It has been the source of the best poetry in the past. It will give rise to yet nobler poetry in the future.

But to return to our graver theme. Without depreciating specialities, it may be pointed out that there is room for a new speciality in the study of history, which is to bring the specialities together, and range them, so far as this can be done, in a continuous sequence. It is as though a geographer should turn to the globe, instead of discussing the map of any particular country. When Eratosthenes of Alexandria was studying the spherical nature of the earth, and all that followed from it, he would not have been helped much by a student of geography who offered information as to mountain ranges and river valleys. For his purpose a mountain range was a negligible quantity that encumbered his thought; yet Eratosthenes had no disregard for geography: he was one of its principal founders.

Let us take a provisional glance at this historical series, as I am now conceiving it. Beginning then with

our own era, we trace it back through Revolution, through Reformation, through feudal institutions, barbarian invasions, Roman conquests, to a time antecedent to the Greek communities of the Mediterranean coasts, when rival theocratic monarchies, Assyrian, Persian, Egyptian, came into hostile conflict. Passing beyond these, we come to social states more or less akin to the barbaric or savage communities of our own time as we see them in Africa or Australasia. What we gain from this first rapid glance is this: we find initial stages common to a great number of communities, the state known roughly as fetichism, common to all. We find some form of theocratic civilization, a government of kings or priests, or of both, shared by very many. From this common stock issues a stream, peculiar to Western Europe, which we may speak of as the stream of modern civilization, beginning with the Greeks, continuing with the Romans, prolonged through the middle ages to our own times; ever growing wider and deeper, and tending, as we now see, to embrace the whole planet.

Now it has been objected to this view of the subject that since Western civilization, as presented in the history of the last two millenniums, is one and not many, it cannot form the subject of scientific investigation. Science seeks for unity in the midst of variety, endeavours to grasp general facts as a means of colligating special facts. "Comte," it has been said (I quote from Messrs. Durkheim and Fauconnet's paper in the first volume of our *Transactions*), "did not admit a plurality of social types. According to him, there existed only a single society, that is human association considered generally; and the particular states merely represent the different moments in the history of the single society. Sociology thus

occupied a strange position among the sciences, since it had for its subject a being unique of its kind."

Let us admit at once that the objection, so far as it goes, is valid. Western civilization, taken as a whole, is a unique phenomenon. It took place once, it will not, so far as we can foresee, be repeated. Yet, even so, it presents itself to us as a series of sixty or seventy generations, each term being in strict affiliation to the term preceding. It is at least conceivable that the law of this series may be discovered, that the final term towards which it converges, may be assigned. In biology it is possible to concentrate attention on a single organism, and to compare the various stages of its life-history from the earliest embryonic form to adolescence, adult life and old age. Not more than this, but not less, need be claimed for the history of Western civilization to entitle it to be considered as the subject of scientific investigation. The solar system was studied scientifically many centuries before there was a suspicion of the existence of more solar systems than one.

A very little consideration is enough to show that no other mode of proceeding is really applicable to the matter in hand. What in a word is the problem before us? It is to examine the process by which men have passed from a social state guided by early forms of belief, fetichistic or theological, to a state guided by modern forms of belief, commonly spoken of as scientific or positive; to see what has remained stable, and what has been changed during this transition; how far the disturbances which have occurred during the process were inevitable; how far wise intervention may modify them in the case of retarded nations.

This being the special business before us, it would seem

obvious that we must begin by directing attention to the region where alone the phenomena which we are to investigate are to be found: that is to say, the history of those nations who have passed from primitive stages to the most advanced stages. Whatever light may hereafter be thrown on our problem by the study of nations like India or China who have accomplished a smaller portion of this advance, we cannot in the first instance take account of these. Our attention must be focussed on the final stage of progress, and on the connection of this final stage with the first beginnings. The process of recorded history of the most advanced nations is in fact the story of the transition from theocracy to sociocracy; that is to say, from a social state in which men's lives were governed by the will of superhuman agencies, whether these were inseparable from visible material objects (fetichism), or were unseen powers governing various departments of nature (polytheism), to a state in which scientific inquiry into the world and society laid bare the laws by obedience to which man is at last rendered capable of modifying human life.

We learn from social statics that there is a certain harmony or consensus between the various aspects of the social organism as seen in each stage of its evolution. Side by side with the law of intellectual change, we have to consider the law of practical change; the transition from the state in which war is the dominant occupation of mankind to the final state of peaceful industry. The large organized communities that we find established in Egypt or West Asia, when recorded history begins, were the result of long internecine war followed by conquest; that conquest being welded together by a highly developed priesthood. The local and tribal gods were not uprooted;

they were slowly effaced by the splendour of the god of the victorious city. Marduk became the chief god of Babylonia, not merely of Babylon ; Asshur the chief god of the Assyrian power, not merely of Nineveh. So it is that we are compelled to recognize that war, ending in conquest and accompanied by slavery, has proved to be one of the most potent engines of civilization. This brings us face to face with one of the most fundamental and characteristic features of dynamic sociology—I mean its relative character. To condemn war as a social curse in the twentieth century after Christ, and to appreciate its immense civilizing value in the twentieth century before Christ ; to respect Julius Cæsar and to condemn Napoleon, is an elementary lesson in sociology which professed students of the science have not always very well learnt. Here as elsewhere we have to make it clear that *relative* does not mean *arbitrary*. Change governed by caprice or chance is one thing ; change in accordance with a fixed law is quite another. Be this as it may, we shall make but little progress in understanding history (and a philosophy of history, as I understand it, means much the same thing as understanding history) unless we realize that war, at a certain stage of the world's history, was one of the chief promoters of civilization. In its earliest and rudest forms it was a school of character ; of courage, caution and endurance ; when prosecuted on a larger scale, it became a school of discipline and obedience. It kept every faculty on the strain, it stimulated all the arts—metallurgy, for instance, the arts of constructing and besieging fortresses, of wielding and applying mechanical forces. The anthropologist will tell us that the bowstring was one of the first, perhaps the very first of our musical instruments. But above all there was the effect of war upon social life ; its

potent stimulus to social cohesion. By war large groups of men were brought to work together in harmonious co-operation.

With war went slavery as its inevitable complement. Here an even greater demand is made on our recognition of the relative spirit, so essential to sociological judgment. We have to let our minds dwell, not exclusively on the state of free labour that ultimately succeeded to slavery, but rather on the state of things that went before it, when death and cannibalism awaited the vanquished. We have to look on slavery as the necessary forerunner of free industry, as the necessary training-school in which the otherwise incurable indolence of the savage and his repugnance to continuous labour are finally overcome. We have to look also at its alleviations—at the share allotted to it, often a large share, in the moral affections connected with domestic life. For the slave was after all a member of the family.

Yet another shade must be added to the picture. In these primitive theocracies it was usually the case that professions of all kinds were hereditary: the son followed the calling of his father; hence the establishment of caste. The reasons for it were obvious enough, and their force has by no means wholly disappeared. Apprenticeship, whether in politics or in shoemaking, is by no means the worst training in the practical pursuits of life. Every one knows of medical families that have continued their profession for generations. In ancient days there was no scientific teaching, and that for the best of reasons—there was no science. The arts of life had to be learnt by practical apprenticeship or not at all. And as each art in these ancient polytheisms was under the tutelage of a special deity, jealous of any change as deities are apt to

be, it is easy to conceive that the institution of caste became, if not irksome to the individual, a fatal bar to wholesome social evolution.

Here then, in ancient theocracy, we have a social state combining many institutions offensive to the modern mind—kings by divine right, priestly guilds regulating the details of life, the whole system based on war, slavery, and caste. To complete the picture, we must remember that there was no separation, as was the case in our own middle ages, between the kingly and the priestly power. This we shall see to be a very fundamental point when we come to the mediæval transition. The ordinary view of Western Catholicism is wholly vitiated by misunderstanding it. At any rate, in *this*, ancient theocracies, church and state, were in the strictest sense *one* and indivisible.

And yet with all their compressive and repressive forces at work, we have to recognize that in these theocratic polytheisms the foundations of the most precious of human possessions, social morality, were laid down, maintained, and carried forward to our own time. A hundred years ago we knew little about them. We had read Herodotus and the Hebrew Bible. We had seen pictures of Indian and Egyptian temples; we had listened for what they were worth to Spanish stories of Mexican and Peruvian monarchies. And this was nearly all. Now very large portions of the veil have been lifted. Comte used to lament the necessity of taking Moses as the sole historical type of theocracy. It is but yesterday that we have learnt of the great Babylonian theocrat Hammurabi, whose code is far more elaborate, and far more accurately preserved, than that of Moses, and much more than a thousand years older. We have the Egyptian Book of the Dead, with the trial of the Spirits in the Hall of Truth; we have countless

psalms of praise and psalms of penitence to Assyrian gods and goddesses. Above all, India has at last become intelligible to us. Postponing for the moment the question as to how far, and at what period, the tribal god of Israel began to supply signs of an exceptionally high moral standard, no one can reject the evidence of affinity in these older polytheistic religions—in their glorification of supreme power, in their cries for succour in distress, in their recognition of justice and mercy—with readings from the Hebrew Bible which for many centuries have echoed through our churches.

Whatever the merits of theocracy, it very obviously did not solve the problem of reconciling personal freedom with social cohesion. Not merely did theocracy not solve the problem, but it became intolerably repressive of any attempts to solve it. To think freely, to disseminate any knowledge that would lead to a change of customs, would have been to invite the fate of Prometheus who stole fire from heaven for the benefit of mankind. It may be that some such thought as this lay in the heart of Æschylus when he composed his mighty drama.

How was the ancient order to be made compatible with progress while preserving what was essential to its existence? That was the problem presented to such a man as Pythagoras, five hundred years before Christ. It has remained the problem for the five-and-twenty centuries that have followed. It is the essential problem for us at the present time. The only difference is that its solution, or some approach to it, becomes every day more urgent. Modern history, if we look well into it, did not begin with the Revolution, nor yet with the Reformation or the Renaissance; nor even with the rise of the Catholic Church: it began with the Greeks.

The initial steps of freedom and progress could hardly be expected from the case-hardened and worn-out civilizations of Egypt, Assyria, or Babylonia. But it was otherwise with smaller polytheistic communities, of whom there were very many throughout the West Asiatic and Mediterranean world. In these the theocratic condition, the uncontested dominion of an organized state-priesthood, had not been reached. They were, more or less, in the stage of development which, as Indian scholars tell us, the Aryan invaders had attained when they had occupied the valleys of the Indus, and had not yet settled in the richer regions of the Ganges and the Jumna.

It is easy to exaggerate the influence of climate, soil, physical geography. Montesquieu and his followers have done this ; so I venture to think have a more recent school of sociologists, that of M. LePlay. On the other hand, it is an equally mischievous error to ignore such influences, and especially in the earlier stages of a nation's history. We are not now considering the concrete case of any one nation, but the abstract conditions under which the emancipation of the Western world from theocratic fetters took place. Take tribes at the state of evolution I have spoken of, when the warrior caste was not yet dominated by the priest caste, when the Rig-Vedas were spoken or sung, and the other Vedic scriptures had not as yet been elaborated, and plunge them into another kind of environment from that of Northern India—regions of temperate climate in which land and sea were intimately mixed—and you have at least many of the required conditions for progressive polytheistic communities like those of the Mediterranean coasts in the second millennium before the Christian era. It would be easy to dilate on those physiographic conditions in much greater detail, were this the

time for doing so ; and to point out how the physical structure of the Grecian mainland and coasts was adapted to Greek history, that of Italy to the history of Rome. Many writers on the philosophy of history have done this ; Comte has done so in the 53rd chapter of his *Positive Philosophy* with a warning, however, that in the present state of our knowledge such speculations were perhaps premature. I take this opportunity of advising students of Comte to read this chapter, and indeed most other chapters of the sociological part of his work in the original, and not in Miss Martineau's very imperfect abbreviation.

In any case, the problem now before us is not the explanation of the concrete facts of Greek and Roman history, but to set forth, if we can, in a very general and abstract way the conditions under which that unique thing, Western Civilization, arose. I have already explained that uniqueness is not necessarily a bar to scientific treatment.

We begin modern history, as we have said, with the Greeks and Romans. We pass, that is to say, from theocratic polytheism to progressive or military polytheism. The issue from the fetters of theocracy begins with communities animated by nature worship and god-worship, but not as yet hardened into sacerdotalism, with activities stirred by warlike conflict—in fact, resembling in very many ways the Aryan invaders of India at the early stages of their Indian life. We have to imagine such communities placed in conditions favourable to change, favourable to the predominance of the warrior caste over the priestly, and yet not favourable to rapid and easy conquest.

We see two such communities, or rather groups of communities, bearing evidence in language and beliefs of

some, though not complete, community of stock—one achieving astounding intellectual greatness, the other accomplishing political results hardly less astounding, and of equal, perhaps of even greater, importance. We see Greek culture and Roman government intimately inter-fused, and issuing in the establishment of a vast peaceful empire based on slavery; otherwise well governed, with many centres of culture, extremely tolerant, fusing the various polytheisms of the incorporated nations into a common state-system. We see the meeting of Hebrew prophets and Greek thinkers giving rise to a new spiritual power, fundamentally differing from any that had appeared before—in that it was wholly disconnected from the state, often hostile to it, always transcending its boundaries; and that it made its appeal to the inward emotions of men rather than to their outward actions. We see the structure of Roman empire threatened, and at last partially ruined, by the invasion of barbaric races of very varying degrees of social evolution. In the struggle between those that had partially assimilated Roman civilization and inherited its traditions against those that were wholly alien to it, the state of society called Catholic Feudalism arose. The spiritualizing and moralizing influence of the Catholic Hierarchy combined with the nobler characteristics of all defensive war to generate a new type of character, of whom Theodoric, Charlemagne, Alfred, the Cid, Godfrey, and St. Louis may be taken as examples. Mediæval Catholicism measured its forces against the rival forces of Islam; with the result that an armed truce was established which has lasted till the present day, with little hope of victory to either side. Each hoped to become the universal religion, and each failed. In the fourteenth century the decline of the Papal powers began, with the exile of

the Popes to Avignon, the long schism that followed, the stormy and discordant councils of Constance and Pisa. In the sixteenth century, the assault upon the Catholic system became systematic, and after the thirty years' war it became clear that even in Western Europe it was not to exercise uncontested sway. The peace of Westphalia divided the West into Protestant and Catholic. The revolutions of the eighteenth century raised the question whether any form of theology was to receive public recognition from the state. In the United States, in the self-governing colonies of the British Empire, and in the Republic of Mexico, that question appears to be decided. In the French Republic, where the question was first raised, the answer is being given at the present moment. So far as the state is concerned, theological doctrine has no existence. Every citizen is free to hold his own form of belief.

The point on which I have been insisting all this time is that the history of Western civilization during the last twenty-five centuries is a passage from theocracy to sociocracy—from a social state in which the dominant principle is the government of mankind by unseen and arbitrary powers, in whose hands we are as clay in the hands of the potter—to a social state in which, however various individual beliefs may be, the governing considerations in public life are not theological and mystical, but scientific and human. There were positive beliefs in the earliest ages of the world; there was never a god of weight, as Adam Smith remarked; and so there will be—such at least is my conviction—theological beliefs in a very distant future. But the question for the sociologist is—Of what nature at each period are the dominant, the governing beliefs, those which determine the collective action of mankind?

In this rapid review of twenty-five centuries, representing the transit from theocracy to sociocracy, one objection meets us at the outset. Is there, it will be asked, any true continuity between Græco-Roman and modern history? Was not the progressive movement of civilization arrested for the thousand years between the fourth century of our era and the fourteenth? Is Vico's theory of history, that the world moves in cycles, after all the true theory? That it moves with oscillations is too painfully apparent to us, as the years and the decades move on; but is there on the whole what may be called an orthogenic line of evolution, a trajectory which, if not a straight line, is yet not a closed curve? In a word, did Western civilization come to an end with the fall of the Roman Empire and begin again with the Renaissance? The student of the philosophy of history, at whatever point of view he may stand, is forced to form for himself some explanation, some *theory*, as the French would call it, of the middle age in the history of Western civilization.

The theory which appears to me most intelligible is as follows, stated in the fewest words.

Greece and Rome developed each one side of our three-fold nature—intellect and the arts of speech in one case, practical activity in the other—in so exceptional and exclusive a way as to need special and long continued efforts to restore the balance, and promote the culture of the inward life—the life of affections, impulses, emotions; in other words, the culture of the heart.

In art, in philosophy, in science, the Greeks did great things, of which it is not needful to say more than one word here. The eternal worth to humanity of such work as was done by Homer, Æschylus, Phidias, Aristotle, Archimedes, and Hipparchus has not even now been

adequately recognized : for full recognition it awaits the moment when the obscurantist superstition of "compulsory Greek" has been finally uprooted from our schools and colleges. But the Greeks, except during two brief moments of their history, were not politically great, were indeed often politically contemptible ; and in the second century, B.C., subjection to Rome, as advised by the great Polybius, was their sole means of salvation from barbarism. The Greeks had to manage their public life with but small assistance from their greatest men. Fine literary culture was theirs ; but literary culture, as the history of the Italian Renaissance shows, is the flimsiest of all foundations of national greatness. It may be even, as in the case of Nero and Alexander Borgia and their surroundings, a special agent of corruption.

Turn now to Rome. It is not needful for our present purpose to consult the great specialists on Roman history. There is an almost complete consensus as to the type of character resulting from the succession of generations in her long history. Shakespeare, Corneille, Bossuet, Mommsen, have described it for us. Nowhere is it so powerfully painted as in the 6th canto of the "Paradise" of Dante, where the whole story of Rome from its foundation to the establishment of the empire is told in forty lines. First over the area of a small English county, then over the Italian peninsula, finally over the Mediterranean coasts and the lands of Western Europe, this dominion was established. Peace came to the world—peace with universal toleration and widespread culture and refinement.

We have then in Greece and Rome an astounding development of two sides of our nature, intellect and practical activity, with no corresponding culture of the heart. The Greek religion in those latter days was what Renan

calls it—a toy-religion, in which no one pretended to believe. The Roman religion was bound up with Roman patriotism, but it consisted of formal precise ceremonies, very much like the Shinto religion of Japan. And as Japan, early in her history, modified Shintoism by the more human faith of Buddha; so Roman men and women took refuge in the passionate and fervid theocracies of the Eastern world. Of these there were more than one. As Professor Dill has recently shown us in his remarkable work on Roman Society from Nero to the Antonines, there was the worship of Mithra traceable in the track of the Roman soldiers from Africa to Hadrian's wall; there was the cult of Isis and Serapis. Finally, there was the theocracy of Judea, with its long line of prophets, culminating in the man who was at once a Hebrew prophet and a Roman citizen; from which, with the help of Platonist, Pythagorean and Stoic, issued the Christian Church. The struggle between these elements was for a long time more doubtful than is commonly thought. The fittest survived—as the fittest, in one sense of that word, always survives. In this case, and it is not always so, the fittest was the noblest and purest; though the victory was not without grievous pain and irreparable loss.

Looked at from this point of view, we shall find that the middle age was far from being the period of stagnation and retrogradation that is supposed by many. Granted that the work to be done was to create a moral environment in which men should be trained, as Aristotle had urged, from infancy to control baser passions, and should breathe an atmosphere of love and reverence, the Catholic Church achieved in what are called the dark ages a large measure of success. A spiritual power wholly independent of the state forming opinion and moulding character, but

quite disconnected, in principle at least, from temporal power, arose for the first time in the world's history. Mediæval attempts to teach were not what we should now think advanced ; but before the middle ages there was no teaching at all except for the cultivated few. The Greeks and Romans had no teaching for the masses of their slaves. Apart from the Church catechisms, the early Benedictine monasteries formed a vast system of industrial schools. And when we look at the vast sphere opened in the middle ages to the spiritual activities of women ; when we remember that in the middle ages the greatest of all social revolutions was effected—the passage from servile to free labour—and when we think of the effects of this emancipation on arts, commerce, and industry centuries before the days of the Reformation and the Renaissance, we shall be slow to endorse the view that Western Europe retrograded in the so-called dark ages.

The truth is, that monotheism as compared with polytheism was in the highest degree stimulating to intellect. I am not speaking of its moral but of its mental action. It raised new and terrible problems, which may be summed up in one, the origin of evil. But for that very reason it stimulated thought in ways unknown before. From Origen and Augustine in the third century, to Scotus Erigena in the ninth ; from Erigena to Abelard and the pre-Arabian schoolmen, from these to the great schoolmen of the thirteenth century—Aquinas, Albert, Roger Bacon—stirred by the influx, through Arabs and Jews, of Greek philosophy and science, we have proof enough that the intellectual stagnation attributed to these dark ages has been grossly exaggerated. They illustrate more than any other time the metaphysical stage in Comte's law of social evolution. The metaphysics of the schoolmen directed to

the defence of the established doctrine were in the end active agents of its decay.

Of the downfall of the mediæval system, partly seen, partly foreseen, by Dante, something has been said already. It began with the disruption of the Papacy nearly two centuries before Luther; it was carried on through reformation and revolutions to our own day, and it is not yet ended. It is of more importance to recognize the germs of the new order to which mankind is tending, the socio-cratic order resting on scientific convictions embracing the highest interests of mankind, and reached by methods which all mankind may accept and approve.

Here again we have to remind ourselves that modern history begins with the Greeks. The newest thing that Greece gave the world—I do not say the greatest—was neither her poetry nor her metaphysical philosophy. In these she was boundlessly superior to other ancient nations; still, other nations, India for instance, had vast collections of poetry, and a long series of metaphysical thinkers. Her most original achievement was the detachment of abstract science in its humblest form—mathematics—from the concrete mass of empirical knowledge to which the old theocracies had been limited.

History, as commonly taught, does not include the history of science; or at best devotes to it here and there a casual paragraph. Even then it is apt to be looked on as a speciality peculiar to some particular country. We are only now beginning to look on great scientific discoveries as great sociological events to be ranged in their proper place, the evolution of man's destiny. From Thales and Pythagoras to Eudoxus, from Eudoxus to Archimedes, from Archimedes to Hipparchus and Ptolemy, the chain of discovery in geometry and mathematical astronomy is

complete. Held fast and extended by the Arab schools of Bagdad and Cordova, from the eighth century to the twelfth, it was handed on by them to the best Western intellect of the thirteenth century—men like Grosseteste, Roger Bacon, Leonard of Pisa, and Jordan, the second General of the Dominican order. It is this continuity that gives its great sociological value to the history of science, a subject unappreciated as yet in British universities. Yet it should never be forgotten that in the great renovation and enlargement of geometrical method initiated by Descartes in the seventeenth century, to which mathematics owes its value as an instrument of physical research, Descartes began by taking up a problem which Pappus, a Greek geometer of the second century A.D., had left unsolved. Between the astronomy of Hipparchus and Ptolemy and the astronomy of Copernicus there was, mathematically speaking, no such chasm as is popularly supposed. The language of Ptolemy is still used in our observatories. Of the economic value of such abstract researches as those of the Greek geometers it is not needful to say much. A tribute is rendered to them every time a sailor uses his navigation tables to find his place at sea. What is more essential to our present purpose is to note the obvious fact that during the last five or six centuries, and most markedly during the last hundred years, the range of phenomena amenable to scientific treatment has been steadily and rapidly increasing. Let us glance for an instant at the salient facts. Galileo's death coincides with the birth of Newton ; within the century and a half covered by these two lives the foundations, and much of the superstructure, of the science which still bears the name of physics had been laid. Before the end of the eighteenth century, Lavoisier, with many others, had created scientific

chemistry, and had made it for the first time possible, not indeed to explain life, but to form an intelligible theory as to what constituted life. Early in the nineteenth century, biology under Bichat, Lamarck and others, detached itself from the common trunk of knowledge, and became recognized as a distinct science. In the generation that followed, Auguste Comte, issuing of course from a long series of labourers in the same field—among whom Vico, Turgot, Kant, Condorcet, may be named—drew the outlines of the science to the prosecution of which this society is devoted—the science of social structure and movement.

We have thus before us Comte's well-known series of the abstract sciences ranged in accordance with the diminishing generality and increasing complexity of the facts dealt with. This is not the time to discuss it in detail. For my present purpose, I will assume it as given, and will regard it as condensed into a series of three terms: Cosmology, Biology, Sociology—the second term dependent on the first, and including animal psychology; the third dependent on the second, and including the study of human nature as modified by the historic process.

Now there is a "mathematical millennium" (I use an expression of the late Dean Milman) towards which Comte has been, strangely enough, blamed by one set of his opponents for aspiring. It consists in regarding the third of these terms as nothing but a deduction from the second, the second as nothing but a deduction from the first. It is, I say, strange that Comte should be accused of this tendency, considering that a great part of his life was occupied with strenuous resistance to it. Its result, when pushed too far, is to blind men's eyes to the truths which are specially characteristic of each science, and concentrate attention exclusively on the truths which are

deducible from the preceding science. In a word, the statue is sacrificed to the pedestal; or to use another illustration, the study of the plant is limited to the study of its cotyledons.

Instances of this aberration abound in the history of science, and often in connection with scientific discovery of the highest importance. Harvey's discovery of the circulation of the blood is an example. Attention was for a long time concentrated, and not unnaturally, on the mechanical forces impelling the blood through its course, and the subtler phenomena of life were disregarded. It is true that these subtler and more complicated facts—the series of chemical metabolism, the reaction of nerve cells on nutrition, and of higher nerve centres on lower—were not known, or at least not scientifically handled in Harvey's time; but wise physicians had instinctively and empirically taken account of them; and this wise empiricism was for a long time after Harvey's discovery often disregarded, with bad results sometimes for medical art. Instances of the same kind abound in the history of biology during the last century.

And so we find it in sociology, both in the relation of the science as a whole to the science of biology, on which it is immediately founded, and in the relations of the parts of the science that relate to simpler social states to those that are higher, in the sense of relating to more complex social states. Altruism is not to be explained in terms of egoism, any more than in terms of chemical metabolism. The higher facts stand on the lower as a temple on its foundations, or as a tree rising from its roots; but they are not mere deductions or corollaries from them. But there is the less need to labour this point, as it is so admirably illustrated in one of the chapters of our

Chairman's recent book on Democracy and Reaction. The error in question is that to which Comte gave the name of Materialism, extending the common usage of the word to every case in which deductions from the lower sciences tend to occupy an undue place in the cultivation of the higher, and thus discourage the inductions on which the progress of the higher must principally depend. There is, of course, an opposite error to which by the same kind of extended use the word Spiritualism may be applied. The higher science dissevered from its connection with the lower is the stem of the plant cut off from the root ; it perishes from inanition.

On social science thus conceived, holding an even path between materialism and spiritualism, the sociocracy towards which we are tending, and which indeed we have already begun to enter, must rest as its foundation. The passage from theocracy to sociocracy, from the ancient order as depicted in the code of Hammurabi to the new order now in process of establishment around us, is, I take it, the central fact in the philosophy of history.

The history of Western civilization is a sequence of social states, each of them following from the one preceding, each giving birth to a successor, but also each knit together by its own consensus, its own passions, affections, customs, thoughts, prejudices, social ties of every kind. Choose from the seventy-five past generations any two you please, you will find the permanent elements of humanity in each of them ; some kind of government, some form of religion, some condition of family life, some phase of collective activity. To study the consensus of these various aspects is the aim of social statics. The present paper is an invitation to this society to study the laws of change, of social movement, in other words, social dynamic. I have

called attention to the altered mode of conceiving man's relations to the world and to society which follow from the slow and gradual substitution of scientific law for arbitrary decisions of superhuman powers. What theocracy has been we know. We revere its results, and yet rejoice to have escaped its bondage. What the sociocracy is to which we are now tending, we are less clearly aware. Dimly we see it to be a state in which holders of every theological creed, or of none, can take an equal share ; that its foundations will rest on scientific examination of the laws of social concord and of social progress ; and that the superstructure will be a fabric of justice, freedom and mutual service, towards the full achievement of which continual approaches will be made.

PART II
COMMEMORATIVE ADDRESSES
ILLUSTRATING THE POSITIVIST CALENDAR
OF GREAT MEN

A—HEROES OF THOUGHT

I

THALES *

I SHALL speak in this and in the three following lectures of the first founders of the Positive philosophy. We have been prepared by the foregoing lectures to see what a fundamental change was begun in the world by the growth of Greek civilization. We can see now, although no one could see then, that Greek art, Greek poetry, Greek republican society laid the axe to the root of the old theocracies. Poetry and art no longer took for their subjects the lives and doings of the gods, but the lives and doings of men. What a contrast between the Hebrew psalms, the songs of the Vedas, or the ancient Hindoo Epics, and the poems of Homer. The first are full of the power and might of the gods, of their Empire over sea and land, over mountains and forest and storm, of their miraculous working among men, in human or superhuman shape. Man, in those early poems, is the slave of the gods. All this we have in Homer too, but the real interest of Homer's poems lies wide apart from this. It lies in the portraiture of human character and human life, of the fortitude of man, of the passion and tenderness and faithfulness of woman. Contrast the breastplate of Aaron, or the cherubs that spread

* Part of a lecture belonging to a course delivered in 1889.

their wings above the Ark in the Holy of Holies, with the Shield of Achilles, presenting in a wonderful series the whole drama of man's life: the ploughing, the vintage, the harvest, the hunting, the marrying and giving in marriage, the games, the meeting in assembly, the law-making, the awful decisions of the judge. In Homer, and yet more in the great dramatists of Athens, the service of God was being superseded by the service of Man. Our reverence is taken away from Zeus the omnipotent God, and given to Prometheus, the friend and saviour of Man.

Now while this long slow process was going on underground through the Greek world, the Greek cult of the gods went on, and was destined to go on for many centuries. Religion is to most men and women a matter of habit, custom, association, penetrating and intertwining with all the actions and practices of daily life, and not to any great extent a matter of prolonged thought. People are shocked at any visible sudden outward change, but if this be avoided they take their religion as it comes every day and ask no questions. And thus it comes about that in the long course of generations the words used in religious exercises have grown obsolete, and no longer correspond in the least to the real facts of life that surround the worshipper. For centuries the Brahmins of India went on using prayers of which they did not even understand the language till European scholars came to explain them. So it is that men read the Sermon on the Mount, or repeat the Lord's Prayer, while they are in the act of fighting their enemies, and utterly refusing to forgive their trespasses.

But though this is the case with the unthinking practical many, it is not the case with the theoretical and thoughtful few. To these men a change in ideas and opinions means

sooner or later a change in practical life ; in men's ways of living together and acting towards one another. And when men like Thales and Pythagoras five or six centuries before the Christian era saw that faith in the old creeds was silently waning, that there was no longer the same absolute belief in the gods coming down from the mountains or the sky, and putting on human shape, that kings were no longer to be looked on as incarnations of the god-head, that on the contrary they were but very poor specimens of manhood, to be fought and resisted, and got rid of, and that laws instead of being as heretofore direct inspirations from the sky, were just the outcome of fellow-citizens meeting in assembly and debating what should be law, and what should be renewed or repealed—when Thales, and Anaximander, and Heracleitus and others saw these things, they began to ask themselves what were to be the guiding principles of manhood in the future ? where then was a firm footing, where truth, certainty, conviction were to be found ?

The first thing they set themselves to do was to try to explain the visible universe around them. It was a scene of constant change, movement, up-building and destroying. The conception of Nature arose in their minds. They saw one region of the world growing out of another. The rocks were the dried-up sediment of the sea-water. The mists and clouds formed themselves from the seas and rivers. The plants and trees grew from the moisture of the soil. In this principle of growth, Becoming, Evolution, Nature, for all these things are different words for the same thing, these early thinkers of Greece sought for some principle of certainty on which convictions as to man's life could be built up.

We have heard very much talk about Evolution in our

own century, and especially during the last thirty years. But when we sum it all up, we cannot say that it has led us to very sure and stable convictions. I remember saying to a friend a month or two after the appearance of Darwin's *Origin of Species*, thirty years ago, that his theory of Natural Selection would be a most efficient means of supplanting Paley's *Theory of Final Causes*: that is to say that whereas all the arrangements in the structure of the eye, of our joints and every part of our fabric were looked on by Paley as proofs of divine wisdom, it would henceforth be possible to say that these mechanisms giving the animal an advantage in the struggle with its competitors for existence, had gradually established themselves by the law of heredity. But though Darwin and his fellow-workers proved clearly enough that Paley's theory of the Origin of Species was very doubtful, it cannot be said that they have established their own. At the present moment the Evolutionists of Europe are divided among themselves in a very remarkable way as to the process by which Evolution has come about: some attaching more importance to the competitive struggle, some believing in internal forces which have guided the process of development in certain definite directions. So that all that has really been done, so far as the public are concerned, is that a gradual process of slow growth has been substituted for sudden interventions of a creator. But as to the forces that underlie that slow growth we remain still in very deep ignorance. And considering that the action of these forces requires a vast succession not merely of centuries but of millenniums to become visible to us, considering that the evolution of a new species requires many thousand years, and that by far the largest number of species now surrounding us were formed probably

millions of years ago, it is exceedingly likely that during the lifetime of man upon this planet of ours this ignorance may never be dispelled.

Therefore the philosophy of Evolution is no quarry from which foundation-stones of firm conviction can be hewn. Evolution, Natura, Physis, is another word for the sum of changes that take place in the world around us. The word tells us very little about the law of those changes, the permanent element that abides in them, that measures them, that enables us to foresee their future course.

Such a source of certainty Thales found in the science of measurement of magnitude. The power of measuring space grew up with the arts of building, and of agriculture. Given a wall so many feet long, high, and thick, men no doubt had found out many centuries before the time of Thales, how many bricks would be needed for the building of it. Mosaic pavement had taught them elementary truths about areas, for instance, that the square of the hypotenuse of a right-angled triangle was equal to the squares on the other two sides. But innumerable problems of a practical kind presented themselves which artisans and builders and land surveyors were quite unable to solve. The word Geometry is the Greek for land-measurement. Herodotus tells us that this problem of land-measurement pressed with peculiar urgency on the ancient Egyptians, because after the inundations of the Nile boundaries between farms were swept away, and needed resettlement.

Throughout the whole history of science we must never lose sight of the pressure of practical necessities, which concentrated attention on particular problems. Any one who looks closely at the history of electrical discovery in the present century will see what strong light has been

thrown on the theory of the subject by the attempt to solve practical problems connected with the electric telegraph or electric illumination. The attempt to solve the practical difficulty has led to the discovery of new principles, new general facts or laws of the science, and from these laws again new inventions have been deduced. This has been shown over and over in the history of Physics and Chemistry in our own time. And so it was with Geometry in the time of Thales. The practical problem of measuring an irregular plot of ground was only one of many that presented themselves in the course of daily life. There was the problem of calculating the amount of available timber in the trunk of a tree. This was a matter of pure guess-work to men in primitive civilization. There were such questions as finding out the amount of grain that could be stored in a given barn ; finding again the height of a mountain or a tower ; or the breadth of a river which could not be crossed. And over and above all these earthly problems there was the infinitely important problem of the Sky, with its revolving stars, those that were fixed, and, above all, those that had independent motions of their own ; the Sun, the Moon and the planets. On the motions of the Sky depended the succession of Day and Night : on the separate motion of the Sun, followed winter and summer, sowing-time and harvest.

These were some of the most prominent questions which the inquisitive minds of the early Greek thinkers set themselves to answer. The answers which they found led them to the first foundations of Positive Science, the first conceptions of Abstract Law, governing the shifting appearances of the universe. For observe, the concrete appearances of Nature would not of themselves lead to this

conception of Law. The Chinese, Assyrians, Babylonians, Egyptians had observed for centuries the motion of day and night, the annual motion of the sun, the succession of eclipses, and so on. But all this had not led them to the conception of Law. All these things were simply dependent upon the will of the gods. They were divine institutions just as the conduct of a man's daily life, his hours of sleep, meal-time, work, and play were human institutions. But Thales and those who worked with him now began to look on the matter in a very different way. He began to consider the general facts, or laws governing all Space, laws admitting of no variety, no divine caprice.

In order to do this, Abstraction was necessary. There was no possibility of measuring a solid body, or the surface of a field, except in the accidental cases where these solids or surfaces happened to be of extreme regularity, as in the case of the brick wall or the mosaic pavement. The first step was therefore to abstract the simplest phenomena from the rest, and to find out the laws of these. These simplest phenomena were the line and the angle. It is a little difficult for us now to realize the enormous importance of this step of abstracting the line which bounded the shape of an object, and regarding it separately. The result, as expressed by the old geometers, was that the Line was length without breadth. It was an ideal existence, abstracted from the facts of nature, though having in reality no existence. As to lines, it was soon seen that only one kind need be considered, those that went straight from one point to another. Curved lines were soon seen to be the same as a series of very short straight lines, each following a slightly different direction; so that the boundaries of all figures could be looked on as straight lines.

The other great abstraction was the Angle, the way in which one straight line leaned upon, or was bent upon, another. If one line stood straight up on another, leaning neither to the right nor the left, it was said to be perpendicular to it, or to make right angles with it. If otherwise, there was a sharp corner or acute angle on one side, and a blunt corner or obtuse angle on the other. On the making of these two abstractions, the angle and the straight line, depended the whole future progress of geometry, the wonderful science which enables men to measure where they cannot touch nor handle : to calculate the motions of the sun, to tell the size, and distance, and weight of the moon and the planets ; also to make accurate charts of the earth's surface, and thus make navigation possible.

It was then found that the simplest figure was one bounded by three straight lines : the triangle, having three sides and three corners or angles. Into this simplest assemblage of straight lines all other figures could be reduced. A figure with four sides and four corners could be divided into two triangles : with five sides into three triangles, and so on. Therefore the chief subject for the consideration of Thales was the triangle. And here it was that he made the greatest and most fruitful of all his discoveries.

It is evident that triangles may be of every conceivable size and shape. With regard to the size, that clearly did not affect the angles : the angles might be of the same size, whether the sides of the triangle were long or short. But triangles might be of innumerable shapes : the three angles might be all equal, or one might be very blunt, a second very sharp, and the third might be a right angle. There is no end to the different shapes. Now Thales found a law or general fact common to all these shapes.

In every possible triangle, he found that the three angles were equal to two right angles.

What is a law of Nature? It is the dependence of one quantity upon another so that when the second is given we can infer the first. Or, to put the thought in another form, a law is the measure according to which the variations of one phenomenon are governed by the variations of another.

Take, for instance, the relation between the radius of a circle and the circumference. Varying the radius the circumference will vary in a certain fixed proportion : and in that fixed proportion of variations consists the law.

A falling body passes through spaces in each successive second varying as the uneven numbers 1, 3, 5, etc. So that it falls one space in the first second : four times that space in two seconds, nine times that space in three seconds, and so on. Hence there is a fixed relation between the distance fallen, and the time occupied by the fall.

A law of Nature supposes that we have abstracted the various properties common to many different objects, and that then, taking these properties two and two, we have found a constant relation between them. Each object in nature, say a stone, a tree, a horse, consists of a collection of properties, qualities, attributes, each of which is common to a great number of objects. It is by abstracting these properties, considering them separately and finding fixed relations between any two of them that we arrive at the conception of a law of nature. There can be no law discoverable in the motions of a single object. For instance, a mass of metal is exposed to a strong heat and it is found to expand : it also undergoes many other changes, its colour alters, its consistency alters, it rusts or

melts, and so on. But leaving out all these other facts, and fixing attention solely on the facts of change of temperature, and change of volume, and showing those facts in a great number of other bodies, we reach the constant relation, that is to say the law of dependence of volume on temperature. If we looked at all the properties or phenomena of any body as they exist in a mass, no law of Nature could ever have been discovered. It is only by this process of analyzing, abstracting, these properties, and then finding out the fixed relations between each pair of them, that we get these general facts, or laws, which we have gradually found out to govern the world. Take, for instance, the great work of Cabanis on the formation of moral feelings by physical conditions. The environment of any one of us is infinitely complicated. There are the influences of age, of sex, of climate, of constitution, etc. Taken altogether these things form an inextricable tangle out of which nothing can be made. What Cabanis did was to analyze this mass into the separate influences that composed it. He considered separately the influence on moral feelings of temperament, of age, of sex, of climate, and so on ; and in each class of conditions taken separately sought to establish laws, that is to say fixed relations bearing on the formation of character. We hear much about synthesis, and synthetic philosophies. But it is of no use to be synthetic till you have first been analytic. We have seen that the measurement of such an apparently simple body as a cylinder or a sphere is wholly impossible until it has been analyzed into something still more simple : till it has been reduced to an assemblage of the simplest possible figure that can be enclosed by straight lines, the triangle. Then, by handling these simplest elements, with them you can again begin to build up a synthesis. From

the triangle you can pass to the polygon: from the polygon to the circle: from the circle to the cone, cylinder, and sphere.

The second great conception of Thales, one of the greatest moment for the future of science, was that of Similarity of two figures of unequal sides. This could only be examined, in the first instance, by taking the simplest figure, the triangle, and by showing that if the sides of the largest figure were inclined to one another in the same way as the sides of the smaller figure, *i.e.*, made equal angles with one another in the two cases, then the figures were of the same shape; and that the relations between the sides that were true of the smaller figure were true also of the larger. Herodotus tells us that Thales taught the Egyptians how to measure the heights of their pyramids by observing the length of the shadow cast when the sun was half-way between the zenith and horizon—half-way up the sky. At that moment the shadow of a stick placed upright in the ground would be equal to the length of the stick itself. Now what would be true of that small scale figure would be true of a greater figure of the same shape. The height therefore of a tower at that moment would be equal to the length of the shadow: so that by measuring the shadow you arrive at the height of the tower. This is as good an instance as could be given of Comte's definition of mathematical science as the indirect measurement of magnitude.

From this conception of figures of different size, but similar, that is to say, drawn to the same *scale*, there soon followed the important law that the space enclosed by the smaller figure was to the space enclosed by the larger as the square of their corresponding sides. Thus, of two triangles, one of which stood on a basis an inch long, and

the other on a basis a foot long, the second was twelve times twelve as large as the first. And this discovery soon led to the further one, that similar solid figures, say pyramids, cones, or cylinders, were to one another as the cubes of their corresponding sides, so that if the side of one pyramid was an inch, and the side of the other a foot, the second pyramid would be 1728 times as large as the first. And thus it is that the comparison of two solid bodies, say two spheres like the Earth and the Moon, is reducible to the comparison of two straight lines, the diameter or the radius of each of those spheres.

Now the effect of these simple discoveries of Thales on the whole subsequent history of science was immense. Our knowledge of the solar system was dependent on it. Without it there could have been no astronomy, no mechanics, no navigation, no measuring of the complicated physical forces, the mastery of which is the foundation of modern civilization. But this is not the only reason—it is not even the principal reason—of the prominence given to the mathematical discoveries of Thales in the *Positive Philosophy and Polity*. We started from the fact that the decay of Polytheism, while Greek art and Greek thought were coming into existence, meant a loosening of the whole fabric of conviction and custom, on which social life depended. The early Greek thinkers put forth hypothesis after hypothesis about the universe—as to how it arose, how it changed, how it evolved from some simple principle like Moisture, or Heat, or Fire, into the complicated fabric that men saw around them, and which the old beliefs in superhuman gods no longer sufficed to explain. These new metaphysical explanations came up one after another, and were just as impossible to prove as the divine beliefs had been. Each contended hopelessly

with the one that followed, and so there seemed no issue but barren scepticism.

But it was quite otherwise with the researches made by Thales and Pythagoras into the laws of number and space. Here, at least, convictions were reached that, when once arrived at, were firm, immutable. Here was a groundwork for the Faith of the future, ultimately to issue in the demonstrable religion of Positivism.

All that I have been saying helps to explain the very great importance which Auguste Comte attributed to mathematics in the Positive system of education. Double the number of lectures was to be given to mathematics that was given to any other of the seven sciences. Comte spent the last year but one of his life in composing a mathematical treatise, intended more for teachers than for pupils, in which all the conceptions in this science which he considered to be of permanent value were arranged in systematic order. He did not consider that any one was properly qualified to teach his doctrine who had not subjected himself to the discipline of mathematical training. He speaks reproachfully of the influence claimed in the teaching of the most complicated phenomena of social and moral life by teachers who have never clearly grasped the difference between a cubic inch and a cubic foot.

The reason for this view is very clear. Positivism is the state of belief in which the reign of Law has been substituted for the reign of arbitrary Gods. Now, it is in the simplest phenomena of space and number that the clearest conception of the meaning of the word "Law" is to be formed. We have seen that law means the dependence of one variable quantity upon another, so that when you know one of the two variable quantities, you can forthwith find the other. A scientific law, therefore, implies

prevision. Science is quite a different thing from knowledge. Take, for instance, a discourse on the history of the Roman empire, or of France during the Revolution. That may be very interesting, but it is not science. It is a description of a particular set of facts. But it does not lay down any fixed relation between them which enables you to say, "Given this fact, the other must necessarily follow." When you read a description of the death of Cæsar, the story does not in the least help you to tell any other event that will come after it. In the same way, a description of an unknown animal, of an unknown country, of an unknown star, however interesting these may be, does not by itself give you any fixed relation between one of the things described and another, so that when you know the one, you can foretell the other. On the other hand, when an anatomist, examining a bone brought by a sailor from the other side of the globe, finds that the bone, though as large as the leg bone of a horse or an ox, yet has an internal structure like that of a bird, and from this and other details infers that the country from which this bone came was once inhabited by gigantic birds, and makes a picture of such a bird, which is afterwards verified by travellers in that country, who find other bones belonging to similar animals,—the procedure in this case is strictly scientific. Owen, the man I am referring to, was aware of certain fixed relations between the bony structure of an animal and its outward covering and other organs. He applied these fixed relations to the case in hand, and was thus enabled to foresee what he could not touch or handle. In the same way, if we come across a nation or tribe in a primitive condition, living by fishing or hunting, wandering over the soil, at war with neighbouring tribes, and with women in a state of slavery and so on, we expect

to find their theories about the universe to be of a very fictitious and fabulous kind; we expect to find spirit worship, ancestor worship, worship for the powers of nature—fetichism, in fact, in all its forms. We start with the fixed relation discovered by Auguste Comte of the law of the three stages, and we apply this relation to the case in hand. This is a scientific process.

It is, of course, clear that these fixed relations are far more difficult to disentangle in such complicated subjects as biology and sociology than in such subjects as arithmetic and geometry. We cannot put them before us in so precise and so clear a way. We cannot measure them so exactly. Here, then, lies the logical value of mathematics as the groundwork of Positive education. It supplies in its clearest, most certain, most precise form, the type of scientific law.

But there is another reason for the prominence given to mathematical teaching in Comte's *Polity*, a reason affecting not merely the intellect, but the character. It is the readiest and most direct road to conscious submission to the supreme Order which we recognize as the foundation of our life. It is impossible for us to appreciate this Order rightly in the more complex branches of knowledge till we have seen its meaning in the simpler. Take the moral nature of man, with all its caprices, passions, revolts, struggles of every kind, how impossible at first sight to recognize any permanent order established there! No doubt the Poets have always instinctively recognized that such an Order existed. They painted the hero as acting heroically, the traitor treacherously; the influence of temptation, of sorrow, of passionate love showed itself in actions which more or less conformed to a common type. But the uniformities were hidden under such wide

diversities that it would have been vain to seek there, in the first instance, for the foundations on which life was built. Hardly less violent and shifting are the agitations of politics ; so much so that men have imagined it possible to build up social and political constitutions at their own will and caprice, as though there were no limiting conditions whatever to overrule the will of man. Even in the structure and movements of living bodies the existence of Law is very hard to detect. When Harvey first saw the heart beating in a living animal, the complication and apparent disorder of the movement were such that it seemed to him for a long while hopeless to reduce it to any principle of Order. The outer world of land and sea was, no doubt, less subject to caprice. But here, too, were the winds and tides, the volcanoes and the earthquakes, to indicate divine caprice and miraculous intervention. How short a space separates us from the time when the variable motion of the planets in the sky were supposed to mark the course of each human destiny. Zadkiel's almanack is not out of print yet. So that we come back to the laws of number and of space, as revealed to us by the labours of these early mathematicians of Greece, as giving us the first immutable foundation of Order on which to build up the structure of human life.

II

ROGER BACON.*

IN 1594 the dramatist Robert Green published his play entitled, *The honorable history of Friar Bacon and Friar Bungay*. It was founded on a popular story-book written a few years previously, reprinted in the second volume of Mr. Thoms's *Early Prose Romances*, entitled "The famous Historie of Friar Bacon: containing the wonderful things that he did in his life, also the manner of his death with the Lives and Deaths of the two conjurers, Bungay and Vandermast." A full account will be found in this romance of the construction by Bacon and Bungay of the Brazen Head; of their invocation of the Devil to teach them how to make the Head speak; of the oracular utterances of this Head, and of its destruction while the friars were asleep; of their rivalry in magic with a German conjurer, Vandermast, in the presence of the King of England and the French ambassador; of the German's discomfiture; of the mystical glass which enabled Bacon to "behold anything that he desired to see within the compass of fifty miles round about him." Finally, the story tells how he repented of the sin of magic, broke his mystic glass, burnt his books, locked himself in a cell, dug his own grave, and died a true penitent and an anchorite.

Into the tempting literary question of the relation of Robert Green's play with a more noteworthy drama,

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Marlowe's *Faustus*, written perhaps a year earlier, I am of course not proposing to enter. Those who are curious on the subject may be referred to Professor Adolphus Ward's careful study of the two plays. My present purpose is to note the fact that three hundred years ago, and three centuries after Roger Bacon's death, he survived in popular memory as a wizard and thaumaturgist, whose tardy repentance barely saved him from destruction in this world and the next. It may be useful later on, not merely for those who are interested in the man, but also as a problem of European history, to inquire how those things could be. But before we do this, let us escape from the region of legend, and plant ourselves on a solid foundation of authentic facts of the thirteenth century, the century in which the Papacy culminated and began to show its first symptoms of decay; in which the Empire passed into the hands of a cultivated free-thinker; in which the two great mendicant orders were founded; in which the universities attained, if not their greatest prestige, yet their fullest life; in which Greek science through Arabic channels streamed into the Western world. Finally, it was the century in which Dante began to think how these things would issue. He was thirty years of age when Bacon died, an old and worn-out man. The two lives never touched.

The life of Roger Bacon has been often told of late. The details of it which rest on contemporary evidence are very few, and may be condensed into a short space. I will allude to these as our subject may call for them. That he was born in the West of England, possibly at Ilchester, a Somersetshire town near the Dorsetshire boundary, early in the second decade of the thirteenth century, is probable. As a young man he came under Grosseteste's influence at Oxford, just in the years when

that remarkable personality was at the height of his influence as an intellectual force, and was not as yet absorbed in the practical problems of Church government.

Grosseteste, the Suffolk peasant, was twenty-five years old when the century began. In Bacon's student days he was in the full vigour of manhood. The details of his early life are not very precisely known to us. We know little more than that he received his early training in the Oxford schools, for at Oxford there was already a *studium generale*; in other words, a University. Probably it was in the first year of the new century that he went to Paris, and took his master's degree. How many years he spent there we do not know; but shortly after his return we find him occupying the highest place in Oxford, as Regent of the Schools or of the Scholars, practically its Chancellor, a title which at a later date was formally bestowed on him.

Grosseteste fills so important a position in Bacon's early life that it is impossible to pass him by. Putting together the various passages in which Bacon speaks of him, and these are many, we find the language used that of a grateful pupil speaking of a revered master. On two fundamental points Bacon is never tired of insisting, Grosseteste's knowledge of science, and his recognition of the value of Greek and Hebrew philology, not indeed as an instrument of mental training (that was not thought of in those days), but as the means for acquiring accurate and authentic knowledge of the Hebrew and Greek scriptures, and of the scientific works of Aristotle and the mathematicians and naturalists who followed him. In the admirable work recently published on Grosseteste by Mr. Stevenson will be found (page 49) an account of his *Compendium Scientiarum*, a classification of all departments of knowledge then explored. In point of comprehensiveness it

amply justifies the statement of his great disciple. The Lord Robert Grosseteste, said Bacon, *novit scientias*, was acquainted with the sciences. Grosseteste's Compendium was not merely an Encyclopædia. Of these miscellaneous collections of knowledge there was more than one in the thirteenth century. The *De Proprietatibus* of Bartholomew, for instance, had a wide circulation, and was known to Bacon. So too was the *Speculum* of Vincent of Beauvais, a work rivalling in bulk and weight that encyclopædic work of our own time which has found such favour with the managers of the *Times* newspaper. Grosseteste's researches in mathematical and physical science covered less ground than these, but were far more real and fruitful. He had profited by that great initiator of modern science early in the twelfth century, Adelhard of Bath, the first translator of Euclid's geometry into Latin. Adelhard had been followed later in the twelfth century, and early in the thirteenth, by a series of mathematicians, among whom Alexander Neckham, Alfred Sershall and John of Holywood or Halifax may be mentioned. Of the two greatest mathematicians of that time, Leonard Fibonacci, the merchant of Pisa, and Jordan of Saxony, the second general of the Dominicans, Grosseteste probably knew nothing.

But Grosseteste was more than a mathematician. He was a great moral teacher and he was a good social reformer. We are not surprised to find in his *Compendium Scientiarum* one section devoted to Ethics, for we know the attention which he gave to translations of the *Ethics of Aristotle*; and another section appropriated to agricultural and domestic economy, for on both these subjects he left us works of great historical interest, notably his Rules for the management of an estate made for the

Countess of Lincoln to guard and govern her Lands and Hostel. Summing up all that we know of Grosseteste's many-sided life and work, we may be sure that so large and rich a nature counted for very much in the direction of Roger Bacon's career.

We pass by a natural transition to the second of the great formative influences that moulded Bacon's genius. In the autumn of the year 1224, two years before the death of St. Francis, two members of the mission which he had sent to England, reached Oxford and hired a small house in the parish of St. Ebbes, from Robert the Mercer. They had already some weeks before constructed their humble cabins within a house in Cornhill, stuffing the partitions, as Eccleston tells us, with grass. The whole mission consisted of nine persons, only one of whom was in priest's orders: the head of the mission, brother Agnello, was a deacon; there was an acolyte, a novice, and five laymen. Their numbers increased rapidly. Young men of standing and recognized ability joined their ranks. Within thirty-two years they had forty-nine settlements in England. In the Oxford settlement William of Essentry the novice, was the first warden. Robert Grosseteste instructed them in theology.

Let it be said at once that it was a long time before Roger Bacon joined them. If he was born as far back as 1210, his coming to Oxford would nearly coincide with theirs, for students were admissible far younger then than now. We have seen that he was a pupil of Grosseteste, and Grosseteste retired from active teaching duty three years before his appointment in 1235 to the bishopric in Lincoln. We shall perhaps be not far wrong if we place the moment of his entrance at Oxford in the year of the death of St. Francis in 1226. He tells us in 1266, a date

which we are able to fix with absolute certainty, that he had been a student for forty years. In my introduction to the *Opus Majus* I have given reasons for thinking that Bacon did not join the Franciscan order till between 1240 and 1245; so that perhaps nearly half of those forty years would have been spent in independent study.

The thirteenth century is incomprehensible to those who neglect the study of St. Francis and St. Dominic; and it is apt to be neglected by those historical schools who concentrate attention too exclusively on the growth of national institutions, be they French, English or German. What is best and strongest in both of the Mendicant orders is that they were not national but international forces, working with the Papacy in holding the nations back from internecine conflict, and in maintaining their allegiance to a spiritual life. Dante, as all students of the eleventh and twelfth cantos of the *Paradiso* are aware, did what he could to reconcile the two orders by idealizing their common purpose. The great Dominican, Aquinas, sang the praises of St. Francis; a great Franciscan, Bonaventura, glorified St. Dominic. Nevertheless I do not think that Dante in his own heart placed them on the same level. Among the petals of the mystical White Rose, of which the thirty-second canto tells us, it is Francis, not Dominic, who takes his place with Benedict and Augustine. Dante thought himself to have belonged to the Third Order of St. Francis.

Why did not the young Roger join the band of enthusiastic comrades to whom Francis was nothing less than a new Revealer, come into the world to bring about that Reign of the Spirit of which Joachim the mystic of Calabria, had prophesied a few years before? There was much in Roger Bacon's nature that would respond to the

call. He too was mystical, he was ardent, and capable of self-sacrifice.

But there are many ways of leading a noble life, and Bacon for the time had chosen another. Paul Sabatier has recently told us in minute detail the tragic struggle that went on year by year from the first foundation of the order between St. Francis and his disciples. It began many years before the death of the founder; it lasted longer than the century. In the earliest of the many biographies of Francis, written by Brother Leo his intimate friend within two years of his death, we are told of a novice who had been allowed by his superiors to retain possession of his psalter, but wished the permission to be confirmed by St. Francis himself. He could not obtain it. "Charles and Oliver and Roland and the holy martyrs fought for the faith and died for it. Now we have those among us who wish to win honour and renown, not by their own deeds but by talking of the deeds of others." "The only knowledge a man possesses," he would say often, "is that which he uses. The tree is known by its fruit. There are so many who tread the path of knowledge, that blessed shall he be who has made himself barren for the love of our Lord God."

The sublime unwisdom of St. Francis was followed by a few; but even of those whom he had touched with his sacred fire there were many who discarded it. Elias, one of his most reverential disciples took a wholly different course which led him at last into very devious paths. Alexander of Hales, who joined the order four years before the death of St. Francis, was for many years one of the most distinguished doctors of theology in Paris. But for the most part the Franciscans of the first generation in Oxford were so far faithful to their master as to lead

very simple lives, fulfilling their vows of poverty and obedience, and troubling themselves little with human learning. With theology no doubt they cumbered themselves far more than their master would have approved. "The rules of these two orders (as Mr. Little observes) forbade their members to take a degree in arts." "In heathen books and practices of philosophy they are not to study," such was the Dominican rule in 1228. With the Franciscans it was the same. Men joined the orders, Bacon says, "at any time between the ages of ten and twenty. They know nothing that is of the slightest service to them as theologians ; thousands of them cannot read the Psalter or Donatus (*i.e.* know nothing either of music or grammar) ; they join the order, and then at once begin their course of theological study. Now theological study needs for its pursuits the whole sum of human wisdom. Naturally they made no progress, and especially since they took no trouble to receive instruction in philosophy after joining the order. . . . They became masters in philosophy as well as in theology before they were disciples." These words were written in 1271, forty years after the time of which we are now speaking, the end of the third decade of the century. Enough has been said to make it clear why this eager young student who had been trained by Grosseteste in the love of every kind of knowledge, should pause before he joined an order whose Founder, as I believe, stirred his deepest personal sympathies, but whose future hung yet in the balance.

It is time to pass to the third of the great influences that were brought to bear on Bacon's life and work. In the year 1230, a great thing happened in Oxford, though, so far as I know, no one but Roger Bacon tells us anything about it.

In 1230, Bacon tells us, in the thirteenth chapter of the second part of the *Opus Majus*, "Michael Scot appeared on the scene, bringing with him certain portions of Aristotle's works on Natural Science and Metaphysics, with authentic comments. From this time the philosophy of Aristotle has been magnified throughout the Western world (inter Latinos)." Michael Scot, born perhaps near Durham in the latter third of the twelfth century, had been brought early in his life into the intellectual movement that centred round the court of the young King of Sicily, who in 1215 became Emperor Frederic II. For authentic details of his life I must refer you to Mr. Wood Brown's careful study, published in Edinburgh six years ago. Enough now to say that after spending some years at the young king's court at Palermo, Scot went thence to Spain, and between 1210 and 1223 joined the celebrated school of Oriental translators founded in the middle of the twelfth century by Don Raymon, Archbishop of Toledo. With Don Raymon were associated Dominic Gundisalvi, his archdeacon, and John Avendeath, a Jew, often spoken of as John of Spain. The work was continued throughout the twelfth century by men like Gerard of Cremona, who translated the Alhazen's great work on Optics.

Gerard died in 1187; and the work of translation was carried on by his son or nephew and many others. It was in full vigour when Michael came to Toledo. Bacon in other parts of his writings gives good reason for thinking that Michael's knowledge of Arabic was very superficial, and that he was very poorly equipped with scientific knowledge. But for our immediate purpose it is enough to say that his advent in Oxford was for Roger Bacon the startling event which turned his attention to the study of

the scientific writings of Aristotle and his successors in the Greek and in the Arabian world.

It is a safe conjecture that the impulse thus given turned Bacon's mind away for a time from the Franciscan order, and inclined him ultimately to Paris, where the most active part of his long and chequered career was undoubtedly spent. That Paris from the middle of the twelfth to the close of the thirteenth century was the principal focus of intellectual life in Europe hardly needs demonstration. Then as now it was the most international of cities; then as now it was the region in which thought was most swiftly transmuted into deed. Abelard's duel with St. Bernard in 1140 had left permanent traces, which prepared the next generation of students for willing reception of the new light coming over the Pyrenees from Toledo. It was seen that the Aristotle of the Mahommedan world, the Aristotle of Avicenna and Averroes, contained a world of new knowledge about man, about natural history, about the constitution of the universe, of which the student of Aristotle's Logic (and nothing but his Logic had hitherto been known) had never dreamed. And now began the series of strange vicissitudes in the reputation of Aristotle described in John de Launoy's interesting book. In 1210 the study of Aristotle's Physics and Metaphysics was prohibited by the Council of Paris, and the prohibition was confirmed five years afterwards by the Papal Legate. In 1543 Peter Ramus was criminally prosecuted by the University before the Parliament of Paris for the impiety of maintaining Aristotle not to be infallible. Returning to the thirteenth century, the condemnation of Aristotle by the Papal Legate in 1215 was much mitigated by Pope Gregory IX. in 1231, and by the middle of the century, at the time when Albert, Thomas Aquinas

and Bacon were in Paris, there was no longer any difficulty in studying Aristotle or his Arabian commentators. Aristotle was at the height of his legitimate power; the pedantifying process that was ultimately to explain, though not to justify, his depreciation by the second Bacon, had not yet begun, or at least was only visible to the prophetic eyes of Roger.

I think it probable that Roger Bacon began his career in Paris about 1240, and that in a year or two afterwards he joined the Franciscan order. He saw by this time that it offered him a boundless sphere of spiritual activity. Dominicans and Franciscans had now become thoroughly organized as two divisions of a Papal Militia, maintaining the international character of the great spiritual government of the Western world. But beyond the Western world lay the Byzantine; beyond the Byzantine the Mahomedan; beyond the Mahomedan was the dark and ominous cloud of invasion.

At the Council of Lyons in 1245 it was decided by Pope Innocent IV. to send a mission to the Tartar Khan (Kuyuk, grandson of Chinghis). Carpini of Perugia, one of St. Francis's earliest disciples, was chosen to conduct the mission. He reached the Khan's headquarters in Siberia in the following year, and he has left us a full record of his travels. Eight years afterwards a similar mission was sent by Louis IX., and entrusted to a Flemish Franciscan, Rubruk, often spoken of as Rubruquis. His account of Central Asia and its inhabitants is even more full of life and incident than Carpini's. I dwell upon these missions because of the deep impression which they made on the mind of Bacon, who makes repeated references to them in the fourth and the seventh sections of his *Opus Majus*. As these references will throw some light on Bacon's

method and purposes, which are still very much misunderstood, we will look at them more closely.

The fourth section of the *Opus Majus* is devoted to Mathematics. What can Mathematics and missionary societies have in common? This. As the ruler of Christendom, destined soon, it was hoped, to be the spiritual governor of the whole world, the Pope should possess, said Bacon, a complete survey of his domain. He should know the precise position of every important city in the world, its distance from European centres, its latitude and longitude, its climate, the character of its population, and above all, the nature of their religion. Now much of this needful knowledge, Bacon goes on to explain, is available for us through the great astronomer and geographer Ptolemy, whose works have been preserved to us in the schools of science instituted four hundred years ago by the successors of Mahommed in Bagdad, and by the offshoots of that school which in later times have been brought to Spain.

How carefully Ptolemy's *Syntaxis*, or, as Arab scholars called it, *Almagesti*, and his *Cosmographia* (Geography) founded upon it, had been studied by Bacon, the Geographical sub-section of his *Opus Majus* shows clearly enough. Bacon saw very clearly that between Ptolemy's determinations of latitude and those of longitude a great distinction was to be made. To find the latitude of a place is a comparatively easy problem. All that is needed is to observe the angular distance of the sun from the zenith on the longest day of the year, the day called the summer solstice, when the sun mounts highest in the sky. When Eratosthenes of Alexandria, two centuries before Christ, observed that on the summer solstice the sun shone at Syene into a deep well, that is, was directly above the observer's head, whereas at Alexandria on the same day

the sun was the fiftieth part of a circumference (in other words, $7^{\circ} 12'$) short of the zenith, it was easy to measure the distance between Syene and Alexandria, and in this way to determine the geographical length of a degree, assuming the earth to be a sphere. In this way the position of places north and south of the equator was fairly well known to the Greeks, and was still better known to the Arabs, whose instruments were far more accurate than those of the Greeks.

But the case was wholly otherwise with regard to distances east and west. This required the power of accurately measuring time; and in time-measurement the ancient world, and even the modern world, was very deficient till the seventeenth and eighteenth centuries.

Ptolemy's maps give four parallels of south latitude and twenty of north latitude. His degrees of longitude are measured along the equator, starting from Ferro in the Canary Islands, regarded as the farthest known land to the West. The positions assigned to each place depend in very few cases on accurate astronomical observations. Most of them are inferences derived from the statements made by travellers. Bacon was, I believe, the first of Western thinkers to be fully aware of their fallacy. The whole work, as he insists repeatedly, needed to be done over again by accurate astronomical survey of the known world, and especially of the Far East, which in his time was gradually coming into view. Such a survey could, Bacon observes, only be carried out (*Op. Maj.*, i. p. 300) "by papal or imperial authority, or by the help of some great king lending his aid to philosophic inquirers."

Meantime accurate geographical information being, as considered, urgently necessary both for the study of human nature as affected by the influence of climate, and

also for the spiritual government of the world, and for the direction of missions aimed at bringing barbarous nations within the pale of Christian civilization, Bacon did the best he could under the circumstances. He compiled his geographical treatise from such sources as were available, taking for his basis the mathematical geography of Ptolemy, and collating Ptolemy's conclusions with all the information he could get from Aristotle, from the Scriptures, from Pliny, from Seneca, from Jerome, Orosius, Isidore, and other writers accessible to him. But he never lost an opportunity of obtaining first-hand information from travellers who had themselves seen the countries he describes.

"Especially in the northern regions of Asia," he says, "I shall follow the account of Brother William, whom the Lord King Louis of France sent to the Tartars in the year of our Lord 1253. He travelled over the regions of the north and east and the lands leading to them, and he wrote of what he had seen to this illustrious king. I have carefully studied his book, and have conversed with its author and also with many others, who have explored countries of the east and south."

Remember that all this was half a century before the time of Marco Polo.

In the seventh section of the *Opus Majus*, published for the first time in my edition, repeated reference is made to these travels of Rubruquis. In this part of his work, Bacon attempts a survey of the religions of the world, the first, as I believe, that had ever been made. For this purpose the Franciscan traveller supplied a mass of interesting material. In and round the Tartar court at Kara Korum there was a strange mixture of religions. Nestorians, Christians, Jews, Mahommedans, Shamanists, and Buddhists were all to be found there. On one

occasion, as Bacon, quoting Rubruquis, tells us, the Tartar Khan assembled representatives of all of them for material discussion. It was a true parliament of religions.

But Bacon's geographical labours, important as they were, and intensely characteristic of the man, must not detain us too long. I can only refer in passing to the celebrated passage (vol. i. p. 290) in which he insists that the habitable portion of the globe extends much farther to the east, and also much farther to the south than is commonly supposed; and that the interval between the west of Spain and the eastern extremity of Asia is far smaller than Ptolemy imagined. This is the passage quoted by Columbus in a letter written October, 1498, to Ferdinand and Isabella. Columbus knew nothing of Bacon; but he quotes the passage from Pierre d'Ailly's *Imago Mundi*; and Pierre d'Ailly, writing 130 years after Bacon's death, had copied it from the *Opus Majus* without acknowledgment. We must pass now to other aspects of Bacon's many-sided work. Many sided and various it assuredly was, yet it was animated by one informing principle. What he aimed at from the first, and to the end, was such a reform of education in the schools of Western Europe as should enable the West to hold its own in its struggle with the East, and thus prepare the way for the ascendancy of the Catholic faith throughout the habitable world.

Much has been said of late of what we owe to the Arabs, in other words to the Mahommedan world, in the period when scientific study was non-existent, or, if that word be too strong, at any rate non-progressive and stagnant, in the schools of Christendom. Much has been said, but I think not nearly enough.

From the institution of the school of Bagdad early in

the ninth century to the capture of Bagdad by the Tartar general Houlacou in 1258, a period of more than four centuries, scientific culture was carried on throughout the East with restless energy. All that had been done by the Greeks in Arithmetic, Geometry, Astronomy, Chemistry, Natural History, the structure of the human body, became accessible in Arabic. Even now there are many sections of Galen's works that are only known to us through translations from Arabic into Latin. The best part of the work of Apollonius, the greatest after Archimedes of Greek geometers, has come to us through the same source. And it would be an utter mistake to suppose that all this Arabic learning was mere dead erudition. It was alive, and grew. The Arabic instruments of observation were more precise and accurate than those of the Greeks. We owe to them the adoption if not the discovery of decimal notation. Albatani (Albategnius) gave new life to the science of Trigonometry, and determined with nearer approach to accuracy than Hipparchus the precession of the equinoxes. Mahommed ben Musa laid the foundations of modern Algebra; Alhazen of Optics. To tell of Arabic researches in chemistry and medicine, would need a volume.

It was dimly seen by a few men in the twelfth century, and by more in the thirteenth, that if Christendom were to triumph over Islam it must be by spiritual not by military force. Not merely in arms but in wisdom the West must show itself equal and superior to the East. Of such men Bacon was the foremost. His *Opus Majus* is an appeal to the Pope to reform education, to promote the new learning, and thus give efficiency to his attempts to civilize and moralize the world.

Let us follow his life from the time that he left Oxford

for Paris, shortly after 1240. In Paris he joined the Franciscan order, and he obtained the degree of doctor in theology. To show himself capable of taking part in scholastic discussion was the first condition of obtaining a hearing. In some of these scholastic controversies he took a keen personal interest. In resisting all tendencies towards belief in the eternity of matter and the consequent identification of matter with God, he showed zeal and originality. In other questions, again, notably in the controversy between Nominalist and Realist, he took a very moderate interest. His heart lay elsewhere in the region of realities and human interests, in the study of language, in mathematical research, above all in experiment. In Paris he came into contact with Peter Maricourt, known as Peter Peregrinus, an obscure enquirer into nature, whom he rated above all the celebrities of his time. Let us see what Bacon thought of him ; it will throw light on Bacon.

"One man," he says, "and one only there is who can be praised for his achievements in experimental science. Of discourses and battles of words he takes no heed. He follows the works of wisdom, and in these finds rest. What others strive to see dimly and blindly he gazes at in the full light of day, because he is a master of experiment. Through experiment he gains knowledge of natural things, medical, chemical, indeed of everything in the heavens or earth. He is ashamed that things should be known to laymen, old women, soldiers, ploughmen, of which he is ignorant. Therefore he has looked closely into the doings of those who work in metals and minerals of all kinds : he knows everything relating to the art of war, the making of weapons and the chase ; he has studied agriculture, mensuration, farming work ; he has even taken note of the remedies, lot-casting and charms used by old women and wizards, and of the deceptions and devices of conjurers, so that nothing which deserves enquiry should escape him, and that he may be able to expose the falsehoods of

magicians. If philosophy is to be carried to its perfection, and is to be handled with utility and certainty, his aid is indispensable. As for reward he neither receives nor seeks it."

Bacon goes on to say that he was engaged in the construction of concave mirrors capable of producing combustion at a given distance. From the one writing of Peter Peregrinus that has survived, his letter to Sygermus of Fontancourt, we know that his speculations on magnetism had great influence on those of Gilbert three centuries afterwards. While talking to this obscure experimenter, Bacon was breathing a very different atmosphere from that of the schools of Paris and Oxford. We can understand the outburst which we find very early in *Opus Majus* (i. 10).

"The wiser men are," he says, "the more humbly will they submit to learn from others: they do not disdain the simplicity of those who teach them: they are willing to lower themselves to the level of the husbandmen, of poor women, of children. Many things are known to the simple and unlearned which escape the knowledge of the wise. I have learnt more important truth beyond comparison from men of humble station who are not named in the schools than from all the famous doctors. Let no man therefore boast of his wisdom or look down on the lowly, who have knowledge of many secret things which God has not shown to those renowned for wisdom."

There spoke the true son of St. Francis!

Bacon's years of work were spent between Oxford and Paris: we cannot tell precisely in what proportions. We know that he was in France in 1251, when the leader of the Pastoureaux passed from Picardy through Paris and Orleans. After then he spent probably a few years in Oxford; and there we may imagine him observing the stars, using his astronomical and mathematical knowledge

to correct the Calendar, making chemical and physical experiments, learning Hebrew from Jews, and Greek from the foreigners who had come to England on Grosseteste's invitation, striving to inspire young students with his own thirst for knowledge, and listening always to the talk of plain men and women about their ways of life.

His reputation grew rapidly; too rapidly for his personal comfort. In 1257 Bonaventura became general of the Franciscans, succeeding John of Parma, as to whose orthodoxy there had been many doubts. It may well be that those doubts extended to Bacon. In any case it seems that Bacon was removed from Oxford at this time, and placed under some degree of supervision in the Franciscan house at Paris. He speaks of it ten years afterwards as an exile; though the restrictions on his personal liberty do not seem to have been severe. Either in England or in France he came into contact with Guy de Foulques, Cardinal Bishop of Sabina, who was sent, in 1264, by Pope Urban IV. on a fruitless mission of meditation between Henry III. and his barons. In 1265 this Cardinal became Pope Clement IV., and in the following year a letter reached Bacon from the Pope requiring him to send him a fair copy of his writings, all orders to the contrary from his superiors notwithstanding; ordering him at the same time to set down in writing what were the remedies proposed for the dangers of which he had spoken. From this letter, which is preserved in the Papal archives, where I have myself seen it, it appears that Bacon had already put himself in communication with Clement, both before and after his elevation to the Papacy.

We owe to it the *Opus Majus*; and also the supplementary treatises edited in 1859 by Professor Brewer. Till that message reached him Bacon had written very

little. He had no money; and he could only write when his superiors were willing to supply him with parchment. On this occasion, being fortified by the supreme authority of the Pope, he applied to his family for money; but they were on the King's side in the Civil War, and were ruined or banished. How he overcame the difficulty we do not know; it is very likely that friendly Jews supplied the money. By hook or crook the expensive writing material was obtained; and within the space of a little more than a year from the receipt of the Pope's letter, the *Opus Majus* and its supplements (known as *Opus Minus* and *Opus Tertium*) were written and preserved for ever to the world as inestimable documents for the history of Science. Whether they ever reached Clement IV. and what reception they met with, we do not know. Clement died in 1268. There was a long papal interregnum. We have not the original MSS., but paleographers tell us that of the two MSS. now extant, one was written in Bacon's lifetime, and one a very few years afterwards.

During the seven or eight years that followed, until the death of Bonaventura in 1274, it would seem that Bacon was unmolested. He passed them in preparing a much larger work of which he often speaks in the *Opus Majus* as *Scriptura principalis*. It was an encyclopædia of philology and science of which important fragments have come down to us, but which was probably never finished. In 1271 he wrote the preamble to this work, published by Professor Brewer under the title *Compendium Studii*. It contains a reiteration of much that he had said before in the first, the third, and the seventh sections of the *Opus Majus*, with even fiercer denunciations of the corruptions of the Church, and bolder assertions of the connection of intellectual darkness with moral degradation. The four

causes of error with which the *Opus Majus* begins are again indicated—blind deference to authority ; popular prejudice ; the influence of habit ; and worst of all, the false conceit of wisdom, involving presumption of knowledge, and concealment of ignorance. He points out in detail how each of the seven deadly sins—pride, envy, anger, avarice, sloth, lust, gluttony,—intensifies these intellectual evils.

Throughout his discourse there runs a tone of something like despair. The gleam of hope that shone upon his life and work when Pope Clement had sent his stimulating letter was lost in the clouds. Clement died in 1268, and for nearly three years the world had been left without a Pope. In the very year in which he was writing, prominent teachers of theology had been expelled from Paris for infamous offences.

His thoughts go back longingly to the teachers and comrades of his youth, Grosseteste, Adam Marsh, Thomas of St. David's, William Sherwood. But none such are now, he says, to be found among the secular clergy ; they have been wrangling for the last twenty years with the regulars ; and even these are not much better. Mere boys are allowed to enter the two mendicant orders, and without any scientific preparations become doctors of theology. The moral standard of Christians has fallen far below that of heathen philosophers, as any one may see for himself who reads Aristotle, Seneca, Cicero, Avicenna or Alfarabius.

Throughout the first half of the thirteenth century, there hovered over the spiritual world a marvellous dream that a new period in the history of man was at hand ; and that as the reign of the second Person of the Trinity had followed on that of the first, so now the reign of the Spirit

was to come. But the year foretold for the first beginnings of this new time, 1260, had long past, and no sign of it appeared. A sterner and darker future loomed before Bacon's vision : the coming of Antichrist.

"So far has the Church wandered from the truth," he says, not once but many times, "that needs must that Antichrist shall come, who with those who belong to him will be destroyed by the Lord Jesus Christ, and truth shall again shine upon the world."

"Punishment may be long delayed," he says elsewhere (Brewer, p. 403), "but it comes at last. As the Jews when their cup of iniquity was full were uprooted by Titus, so with the Christian Church. Either a Great Pope and a great Emperor will unite the spiritual and temporal power to purge the Church, or Antichrist will come, favoured by the discord of Christian princes and the invasion of Tartars and Saracens ; in one of these ways the church must be purged, though in which we cannot tell."

In 1274 Bonaventura died, and Jerome of Ascoli, a very different man, became general of the Franciscans. Four years afterwards, when Jerome was in Paris, Bacon was brought before him for judgment. We learn from the chronicle of the twenty-four Generals preserved at Assisi that Jerome—

"by the advice of many of the brothers condemned and denounced the doctrine of Roger Bacon the Englishman, master of theology, containing certain suspicious novelties ; for which the said Roger was condemned to prison, with order given to all the brethren that none should hold his doctrine, but avoid it as reprobated by the order. He wrote moreover to the Lord Pope Nicholas III. so that by his authority this perilous doctrine might be altogether silenced."

Which were the novelties thought worthy of condemnation we cannot tell. There were plenty to choose from. His reprobation of the false conceit of knowledge was the real grievance, as it was with Socrates.

Bacon's career was at an end. He was released probably in 1292, fourteen years afterwards; when Raymond Gaufredi became general of the order. In that year we know, for he gives us the date, that he was writing a theological treatise. There is a flash or two of the old fire, as in his denunciation of the pedantic scholasticism of Richard of Cornwall; but on the whole we must call it *telum imbellis sine ictu*. The fourth cause of error, "false conceit of knowledge," outweighing in its noxious qualities the other three, is conspicuous by its absence. He is said to have been buried in the Franciscan church in Oxford. Somewhere in St. Ebbes we may hope that some day a statue will be raised to him.

But it is time to go back to the main purpose of Bacon's life, and sum up its results. His purpose, as we have seen, was to institute under papal authority a school of scientific and progressive culture that should enable the West to hold its own against the East, and thus promote the work of the Church in civilizing and evangelizing mankind. We should wholly misconceive him, such at least is my firm belief, if we supposed that his language on this matter was a veil beneath which heterodox speculation might be allowed to pass. He was not merely orthodox in the common acceptance of the word, but intensely papal. The Popes of his time, and of the century before him, were great spiritual rulers; and such harmony between the Western nations as existed was preserved by their authority. Bacon did not live to see Boniface. With the downfall of an independent papacy in the fourteenth and fifteenth centuries, a wave of barbarism and darkness swept over North-Western Europe. One of its results was the hundred years' war. Nobody thought then of studying Greek in Oxford, or in Paris either.

We have to look on Bacon, not as a pure speculative thinker following obscure and special lines of research for the intellectual satisfaction which they conveyed, but as an orthodox and enthusiastic Catholic, convinced that the limits of orthodoxy needed and were capable of enlargement, that Catholic truth and scientific truth were alike revelations proceeding from the same source, and converging to the same end ; that scientific truth was always growing ; and that the worst enemies of the human race were those who thought they possessed the whole of it. This is the essential purport of the first two sections of the *Opus Majus*. Of the four great obstacles to wisdom, undue deference to authority, custom, popular prejudice, were bad enough ; but they were as nothing to the fourth, unwillingness to confess ignorance, false conceit of the knowledge we happen to possess. To this it is due that all new truth coming into the world meets with obstinate resistance. Moses found it so with the Egyptians ; so it was with the Apostles, with Jerome, with Gregory. And with philosophers it has been the same thing. Aristotle was never recognized till Avicenna and Averroes revealed his greatness ; and even in our own time, he remarks, we have seen all three of them condemned in Paris. Let us never be afraid of knowledge. What we know will always be the smallest fraction of what remains unknown. "None is so wise in natural things as to tell all the truths as to the nature and qualities of one poor fly, to explain why it is of such a colour, why its limbs are what they are, and not more nor less."

In pursuing his purpose of advancing the studies of Western Europe, Bacon relied on three instruments : Philology, Mathematics, Experimental Research. To those subjects the third, fourth, fifth and sixth sections of the

Opus Majus are devoted. By Philology Bacon meant the study of languages other than Latin ; and, notably, Greek, Hebrew, Arabic. He had no notion of recommending the study of languages as a mental discipline. That theory, be it good or bad, is of far later date. Possibly indeed some of its developments might have been classed by Bacon under his fourth Cause of Error. He simply observes that the original sources of our knowledge are in no case Latin, but always Hebrew, Greek, or Arabic. If the study of the Scriptures and of philosophy is to advance, it must be carried on not in Latin translation, but in the original. He fills this section of his work with illustrations of the blunders made by Aristotelian and Biblical commentators who knew nothing of Greek or Hebrew. To stimulate his reader, he supplies a copy of the Greek and Hebrew alphabets. Ultimately he wrote a grammar of both languages, of which the fragments that remain were published in 1902 by the Cambridge Press. It was not merely for the sake of Biblical and philosophic culture that he advocated the study of language. It was needed for our commerce in the Mediterranean, where the want of it involved our traders in heavy losses. It was needed still more for foreign missions, and for papal diplomacy with the East. When the Sultan of Babylon sent a letter in Arabic to Saint Louis, not a single man, he tells us, could be found in the University of Paris to decipher or answer the letter.

The fourth and fifth sections of the *Opus Majus* containing Bacon's work on Mathematics and Optics occupy about half the work. There is but little that I can say about them usefully in the short space that remains. Mathematics he tells us is the key and the entrance-gate of science. It is the type of certainty, the touch-stone

which distinguishes knowledge from ignorance. Of his application of Mathematics to Geography I have already spoken. Another large sub-section relates to the reform of the Julian Calendar, which as he shows made the year too long by the $\frac{1}{130}$ of a day, and therefore in the thirteenth century was ten days wrong. This part of his work endured. Paul of Middleburg copied much of it, though without acknowledgment, two centuries afterwards; and through him it passed to Copernicus. Three centuries after Bacon's death the reform was accomplished; though, alas! not in this country, which, owing to antipapal controversies, had to wait for it yet another two centuries.

More important than any special discoveries or inventions are his conceptions of the radiation of force through space, some of which seem not indeed to anticipate, but to possess kinship with the most striking achievements of our own time. I have shown in the notes to my edition of the *Opus Majus* that in his view the propagation of force consisted not in emission of particles, as in Newton's theory of light, but in setting up a disturbance in the medium successively transmitted to new portions of it. In other words, light and heat were not emissions of substance but a train of undulations. He gave conclusive reasons for believing that passage of light through space was not instantaneous, but occupied time; though by man's imperfect sense the time was inappreciable. To the second Bacon, this supposition seemed monstrous. Further he conceives of many radiations of which the senses of man unaided were unable to take cognizance. But all these mathematical conceptions of force, however valid, were to be controlled and tested by direct observations and experiment. To experimental science the sixth section of the work is devoted, though it had, of course,

been abundantly illustrated by the previous section on Optics. It is this combination of mathematical with experimental method that marks the difference between Roger Bacon and the more famous author of the *Novum Organum*. Francis Bacon speaks of mathematics as he speaks of Aristotle, with scornful irony. Roger Bacon believes mathematics to be absolutely necessary for sound views of nature, and at the same time to be by itself utterly insufficient. Aristotle and the mathematicians, he said, may supply certain general principles of research. But their verification must be sought in special sciences (*scientia particularis*), in optics, in chemistry (*alkimia speculativa*), in the study of plants and animals (*agricultura*), and generally in experimental research. Without this the natural philosopher will be *nudus*, he says: unequipped. His work will be a mere collection of deductions from a few abstract, remote, and undeveloped principles. (See *Opus Majus*, vol. iii. pp. 184-5.)

Something should be said of his anticipation of the physical and mechanical discoveries of later centuries. Bacon did not invent the telescope any more than he invented the steamboat or the locomotive or the flying-machine. But his scientific imagination gave him an astonishingly clear forecast of all these things. What may be said of him is that he set the world upon the right track towards their discovery; experiment and observation combined with mathematics, when mathematics were available and when they were not available, then experiment and observation pursued alone. Much of what he says on these things was learnt in the workshop of Peter Peregrinus.

The seventh section of the *Opus Majus* is the crowning of the work. Its entire omission from the first printed

édition has entirely vitiated the popular conception of Bacon. Let us see what he says of it in the opening sentences.

"I have dealt," he says, "with the study of languages, with mathematics, optics, and experimental science, and have shown how necessary they are in the pursuit of wisdom. I now proceed to a fourth science of greater value than these, the science of human conduct. We leave the region of theory, we enter the domain of practice. For though many of the foregoing sciences deal with practical operations, yet they do so in subordination to theoretical reason. This science deals with practical reason. It is the practicable science *par excellence* (*autonomatique*) which teaches us the ways of good and evil."

This section consisted of six parts, of which only the first four have been preserved. In the first he discussed the relation of Moral Philosophy to Christian Theology. Anticipations of Christian doctrine of non-Christian philosophers form the main subject. This line of thought had, as we know already, been taken by Augustine, and was familiar to the schoolmen of the thirteenth century, notably to Aquinas. But it was carried on by Bacon much further than by others. Not merely are Greek and Latin thinkers pressed into the service, such as Socrates, Democritus, Plato, Aristotle, Cicero, Seneca and Porphyry, but the same use is made of Mohammedan philosophers such as Algazel, Albumazar, and above all of Avicenna.

The second treats in a very brief way of the bonds of social life. There is nothing at all corresponding to Aquinas's admirable discussion of the virtue of justice.

The third part is devoted to individual morality, and is extremely full. Here as elsewhere he dwells at length on the value of heathen writers, and to the shortcomings of his own time from their standard.

"In the virtues of faith, hope and charity much," he says, "is open for us of which they knew nothing. But in the virtues which are needed by all of us for nobleness of life, and for intercourse of man with man, we are inferior to them in speech, and we are less effective in deed. This is deeply disgraceful to us and deserves our scorn."

His chief authorities on this branch of the subject are Aristotle's *Ethics*, Cicero, and Seneca. He shows successively how each of the seven deadly sins had been condemned by these moralists. The discussion of Anger, on which Seneca had dilated so largely, leads him to speak at great length of the moral states opposed to anger: resignation under calamity, and forgiveness of personal injury. Here again he takes Seneca for his guide, adopting the mediæval legend that between Seneca and St. Paul there had been friendly intercourse.

The fourth part of this section presents Bacon's survey of the religions of the world, and his reasons for preferring Christianity. He refers as I have already said, to the parliament of religions held in Siberia by Mangu Khan in which the Franciscan Missionary Rubriquis bore a part.

Let us sum up in a word the scheme proposed in the thirteenth century by this extraordinary and neglected thinker to the ruler of Christendom. It included a school of Greek and Oriental philology, mathematics in its broadest acceptance, experimental science: the whole in subordination to the highest ethical purpose known to mankind. Surely a large and comprehensive scheme of study. When was this vision realized? Not in the fourteenth and fifteenth centuries: for the downfall of the papacy left the Western nations free to wrangle, and England and France were darkened by a hundred years of war. Not even in the brilliant revival of scholarship

and science during the sixteenth and seventeenth centuries was their social purpose so fully recognized as Roger Bacon would have hoped. Immense strides have been taken in our own days towards the accumulations of linguistic and scientific knowledge. The increasing speciality of scientific research opposes a formidable barrier to the synthetic scheme, toward which Bacon aspired. Nevertheless I retain the firm conviction that the barrier will be passed; and that Bacon's vision will be realized in the twentieth century, though not perhaps in the precise way which he had imagined.

III

HARVEY AND HIS SUCCESSORS *

WITHIN a few days of Shakespeare's death William Harvey, physician to St. Bartholomew's Hospital, opened his course of lectures as Professor of Anatomy and Surgery at this College.† The rough notes used by him in these lectures were published a few years ago by the College in facsimile, and few documents of greater importance for the history of European science have been given to the world in the present century. For not merely do we find in it clear proof of the completeness of Harvey's great discovery

* The Harveian Oration, delivered at the Royal College of Physicians, October 18, 1892. Reprinted by kind permission of Messrs. Macmillan and Co.

† It were to be wished that Shakespeare's appearance were as well known to us as Harvey's; for there are many portraits of the great biologist besides that which faces the Harveian orator in the library of the College. These represent him at a somewhat advanced age. The two at Merton College—or, at least, that in the Warden's house—show him, probably, as he was in 1645-6, during his year of Wardenship. He was then sixty-seven years old. Of the fine portrait in the possession of the Master of University College, Oxford, inherited from his father, Dr. Richard Bright, I have the following description, kindly sent to me by its owner: "It represents Harvey with iron-grey hair, with a small, drawn, pointed face, with good strong brow and forehead, and rather delicate mouth: no sign at all of roundness. It is a remarkably thoughtful, almost suffering, face. The hands are singularly delicate, most beautifully painted, and with a good deal of character."

But in 1616 we may well believe that Harvey had the raven-black hair, vivid eye, and animated gesture, though not the "round face" of which Aubrey speaks. (See Willis's *Life of Harvey*, ed. 1847, p. lxxv.)

twelve years before the accepted date of its publication, but it opens a window through which we may watch the workings of a powerful and most original mind, and appreciate the breadth with which at a most critical period of scientific history he handled the problems of life.

In appreciating the life of a great man, as in that of the humblest protozoon, we have to bear in mind the essential fact of life first propounded by Comte, and subsequently illustrated with such fulness by Herbert Spencer, that it is a mutual action, ever tending to adjustment, between organism and environment. The environment of higher organisms, no longer limited to the contact of surrounding particles, embraces all the social and intellectual influences to which a highly organized brain may be sensitive. Estimated in this sense, what was the environment of Harvey? He was born at the greatest period of English history, not that of her world-wide empire, of her enormous wealth, of her crowded population, but the period in which she gave birth to her greatest men. Within the compass of Harvey's life there lived on this island Shakespeare, Spenser, and the galaxy of Elizabethan dramatists, followed by the great epic poet, who was in his prime when Harvey died. In philosophy there were Bacon, Hobbes, Locke. In science there were Napier and Briggs, the inventors of logarithms; Harriot, the forerunner of the mathematical revolution of Descartes; Wallis, the algebraical precursor of Newton; Gilbert, the founder of magnetic science; and that most fertile and ingenious of physicists, Robert Boyle. If statesmanship were in question, it would be sufficient to name Elizabeth and Cromwell.

Passing from England to the Continent, we may say that Harvey was born into the full splendour of the philosophical

and scientific Renaissance. In art the Renaissance had set in a century before, under Ariosto, Raphael, Da Vinci, and others. The awakening of science was not slow to follow. Thirty years before Harvey's birth, the *Revolutions of Celestial Bodies* had been published in the last month of its author's life. The work of Copernicus was carried on during Harvey's youth by Tycho Brahé and Kepler. The cometary genius of Bruno was flashing through the universities of Europe, preaching the gospel of the new astronomy; and with a yet greater man than these the young Harvey was brought into near contact.

In 1597 Harvey took his degree at Cambridge, at that time a school of no great importance; in the following year he went to Padua, and studied under one of the greatest among the many great anatomists of that century and country, Fabricius of Acquapendente. Six years before this time a young man had been appointed to the professorship of mathematics in that university who was to open a new epoch in European thought. Galileo Galilei had already made his mark in his native city of Pisa. He had studied medicine under Cesalpino, chafing, no doubt, under his interminable pedantries. He had made his brilliant discovery of the equality of time in the oscillations of the pendulum, and had applied that discovery, by a pendulum of suitable length, to the study of the speed and regularity of the pulse; the first instrument perhaps ever constructed for the precise observation of phenomena in a living organism. He had already done fierce battle with the powers of darkness in attacking the petrified philosophy that was called Aristotelian, and in laying the foundation of the true science of motion. The mathematics in which he was interested were applied mathematics, the interpretation and measurement of physical

forces. From the beginning to the end of his life his unflinching conviction was that the phenomena of motion and energy which constituted the world were calculable quantities. The very use of the word "mechanics" to denote the abstract sciences of static and dynamic dates from his treatise, published in 1593, on the *Utility of the Scientific Study of Machines*. In this work the great modern conception of the conservation of energy is, I believe for the first time, traceable in his discussion of the paradox that the smaller weight on the longer arm of the lever balanced the heavier weight on the shorter one. "Philosophy," he said, "is written in the great book of the universe, which lies always open ; but we must first understand the language and the character in which it is written ; that language is mathematics. Without it we cannot understand the words, and wander through a dark labyrinth without a clue."

His lecture-hall in Padua held two thousand students, and was crowded with strangers from every part of Europe. He had the art of forming a school and of attracting young men round him. Torricelli, the first measurer of atmospheric pressure, was one of his pupils. The thermometer, first invented by Galileo himself in an imperfect form, was completed by another pupil shortly afterwards. Of the telescope I need not speak ; and again it must be repeated that Galileo took the first step to that all-important condition of science—the precise measurement of time. In a word, the science of physics was founded by Galileo.

Of personal intercourse between Galileo and Harvey we have no record, but that the influence of his mighty genius is to be taken into account as one of the incidental forces which moulded his mind there can be no doubt whatever. He came back from Padua with the sense that

nature was not merely to be observed, but measured. He had imbibed elementary truths as to motion and energy which stood him in good stead when he began himself to think on the mechanism of the human body.

Let us briefly review the condition of biological science at the close of the sixteenth century. It may be summed up in one sentence—an advanced state of descriptive anatomy; hopeless confusion as to the functions of the organs described. The debt we owe to the descriptive anatomists of the sixteenth century has perhaps never been adequately recognized; though Vesalius, Eustachius, Fallopius, and others have left their names inscribed on various structures of the human body. They were the worthy successors of Galen, whose works are themselves a cyclopædia of the anatomical and medical knowledge gained in the schools of Alexandria, enlarged by his own observations and experiments. In the schools of Padua, Bologna, and Pisa every part of the body was dissected and scrutinized as minutely as was possible before the invention of the microscope, and none more minutely than the heart.

But with regard to the functions of these organs, the confusion of men's minds was complete and seemingly hopeless. Physiological science was far below the level at which Galen had left it. Galen was a strictly scientific observer and thinker, inheriting the results of six centuries of Greek inquiry, from Hippocrates onwards, and pushing them forward with marvellous zeal. In the thirteenth century the great schoolmen—notably, Albertus Magnus and Roger Bacon—had shown themselves his worthy successors. They brought Aristotle's scientific researches into prominence, and held them up as models for imitation. Afterwards came a time of stagnation and retrogression.

For several generations the professorial chairs of Europe were filled by men who worshipped Aristotle not as a keen observer of nature and a progressive thinker, but as an inspired prophet who saved them the trouble of thinking. Even their Greek science they read backwards. If Galen in the second century A.D. differed from Aristotle in the fourth century B.C., so much the worse for Galen. Thus, for instance, we find the man who is sometimes held up to us as the true discoverer of the circulation—Cesalpino of Pisa—rejecting Galen's admirable investigations into the nervous system, and reverting to the curious doctrine of Aristotle, that the brain was a refrigerator of the blood which had been raised to boiling-point in the heart. Similarly on respiration, where Galen's views, though very imperfect, were far less wide of the mark than Aristotle's, Cesalpino had no hesitation in following Aristotle rather than Galen. Pedantry, obscurantism, indolence account for much of this, but not for the whole. The doctrines of the Church had become inseparably intertwined with Aristotelian metaphysic and logic. To assault Aristotle was to proclaim yourself a heretic.

Now, by Aristotle and all his successors the heart was regarded as a furnace, or at least a reservoir of heat, by the agency of which animal heat was maintained and the food was concocted. It was regarded also by Aristotle, though not by Galen, as the *sensorium commune*; it was the first organ that arose in the embryo, it was the last to die; it supplied the tissues with that which made them sensitive. In the fifth of the *Peripatetic Discussions of Cesalpino* (sect. 4), we have the following thesis maintained. The soul, he says, is not made up of separate parts, each residing in a separate organ; nor does the whole soul reside in the whole body, but the whole soul resides in the

heart. He quotes with approbation the view of Aristotle that the animal is a commonwealth of organs, the soul being the ruler of that commonwealth. The heart is the soul's court; and as in a community all things are done by the soul's decree, though the king does not intervene in each detail, so do all organs live by virtue proceeding into them from the heart. For instance, in the function of respiration, the beginning of the series of actions concerned is the heart's heat. The blood boiling up in the heart not merely dilates the heart and so produces the pulse, but it dilates the lungs also by sending into them a continual stream of heated blood. The lungs being thus enlarged, it follows that external air streams in through the bronchi, and this we call inspiration. Thence results a cooling of the blood and a diminution of its bulk, as when drops of cold water fall on boiling oil. The lungs collapse and air is given out. This we call expiration. The heart's heat is thus the initial force in respiration.

The whole of this alchemistic apparatus set up inside man's body, the heart boiling the blood to the point of evaporation, the subtler spirit thus produced condensed in the cooling chamber of the brain and issuing from it in the form of nerves, the lungs acting as an additional cooler, so that the part of the blood which remained liquid might be brought to the right temperature—all this confused and complicated fabric melted away as a morning mist before the touch of positive science applied by Galileo to inorganic matter and by Harvey to living organisms.

Let us not be unjust to Harvey's predecessors. It is quite true, and it should never be forgotten, that certain partial anticipations of his discovery had been made in the sixteenth century. By Servetus and by Colombo the transit of the blood from the right ventricle through the

lungs to the left side of the heart had been distinctly put forward as the most probable hypothesis ; and it is also true that Cesalpino had shown that, in consequence of the arrangement of the mitral and the aortic valves, the flow of blood was from the left ventricle towards the various organs of the body. I quote his actual words—

“ There is a motion from the veins into the heart while its heat draws in aliment ; and at the same time there is a motion from the heart into the arteries, because, owing to the position of the valves, the blood cannot flow in any other way, for the same motion opens both apertures—that of the vein into the heart, that of the heart into the arteries.” *

Combining the view of Servetus and Colombo with that of Cesalpino, it might seem that a true and complete conception of the course taken by the blood would be reached ; but, as a matter of fact, by no physician or anatomist of the sixteenth century were they at any moment so combined. Cesalpino was aware, indeed, of Colombo's hypothesis, which may be found stated, as Sir G. Johnson has shown, in two passages of his works. But these passages are entirely dissociated from the foregoing quotation. For a coherent view of the movement of the blood as a whole we may search in vain. The substantial identity of the fluid moving through the vascular system was never grasped by him or by any one else. There were, men thought, two kinds of blood—one which was perpetually being manufactured in the liver and thence sent to the right side of the heart as fuel or aliment for the heart to work upon ; the other was the concocted fluid

* See Cesalpino, *Questiones Peripateticae*, lib. v., sect. 5. This work was published in Florence, 1569. For a fuller discussion of this part of the subject the Harveian oration of Sir George Johnson in 1882 should be consulted.

flowing from the heart to the tissues, part of it having passed to the lungs for cooling purposes, and part filtering through the partition wall dividing the right side of the heart from the left. When we leave the consideration of the motion of the blood and turn to that of the motion of the heart, we find Cesalpino, like all his predecessors, hopelessly in error. In his view the expansion of the heart with blood was the efficient cause of the blood's motion, this being produced, as we have seen, by the boiling up of the blood when exposed to the imaginary heat residing in the heart. He insists emphatically that the contraction of the heart was a mere collapse due to a temporary cessation of the boiling process. In death the collapse, he remarks, is complete; in the moribund it is nearly complete. To attribute any expulsive force to the heart in this condition would therefore be out of the question. Thus the pulse results not from systole, but from diastole. Indeed, the consideration of the pulse is the main subject in this chapter of Cesalpino, the question of the heart and its motions being quite secondary. It may be stated broadly that the conception of a complete circulation of the blood and the conception of the heart as a contractile organ exercising mechanical energy were alike foreign to him.

Nothing is more interesting than the vivid, pithy way in which the true view both of the heart and of the blood is expressed in Harvey's MS. notes. "The heart, when contracting, moves like a muscle," he says. "By the impulse of the heart there is a perpetual movement of the blood in a circle." Again, if I may quote the quaint mixture of Latin and English, "*Constat per fabricam cordis sanguinem per pulmones in aortam transferri as by two clacks of a water-bellows to rayse water.*" The

imaginary furnace that had been set up for so many centuries within the human thorax disappeared, and in its place there was an organ of definite construction, comparable with one of Galileo's machines, exercising a measurable amount of energy.

The overwhelming importance of Harvey's researches, the feature that marks them as an epoch in the history of modern science, is the positivity of their method. We pass from metaphysical haze into an atmosphere of reality, utility, certainty and precision. He uses every method of biological research, direct observation and measurement, experiment, and, above all, the great Aristotelian method of comparison; an instrument of research created, so to speak, by biology, and one so potent in every branch of scientific investigation that, apart altogether from its application to medicine, the science of biology would deserve all the pains that have been spent upon it. It is to the use of the comparative method that Harvey himself explicitly attributes his success; yet to what an extent he used it could hardly be appreciated till the publication of the notes of his lectures. In these the anatomy of eighty animals examined by himself is referred to.

It has sometimes been said, especially of late years, that experimentation on living animals was the process through which Harvey's discovery was achieved; but this, though it has been used as a potent argument before an uninstructed public, has always appeared to me an exaggerated view. I am not about to enter, even in the most cursory way, into the ethics of the subject. It was not imagined in Harvey's time that any ethical problem was involved in it. So far as I can find, the first to recognize the existence of such a problem, and to distinguish himself from his contemporaries by voluntarily

accepting a certain measure of parsimony and restraint in experiments on living animals, was that great and successful experimenter, deep thinker and humane man, Sir Charles Bell.*

But the question by what methods the discovery of the circulation was reached is one for the dry light of historical research. Harvey's MS. notes show, even more emphatically than his published work, that direct observation of the pulsating heart in the higher vertebrates taught him but little. "*Neque visu neque tactu*" are his emphatic words in these notes; "I could not follow the heart's motions by sight or by touch, though I watched them for hours together. *Videte quam arduum et difficile discernere; see,*" he says, pointing at the moment to the experiment he was performing, "see how hard it is to distinguish by sight or touch as to dilatation or contraction, which is *systolé* which *diastolé*." When the animal was moribund and the movement slow, or when he operated on cold-blooded animals with a simpler form of heart, he was more successful. When the discovery had been fully made, and the business of convincing others of its truth began, vivisectional experiments were of use to him. But the principal paths that led to the discovery seem to me to have been—first, the conception of the heart as a machine, exercising definite and measurable force on the fluid which it contained; secondly, that for the first time there was an attempt to measure the amount of blood contained in the heart and voided with each contraction,

* It may be well to explain that my own attitude on a very vexed and difficult question is, and has been for many years, that of a supporter of the present Act of Parliament against attacks from more sides than one, pending the establishment, not merely in England, but in Europe, of such ethical restraint as men of Bell's temper would recognize.

the result being to show that the rapidity of the current and consequently the mass of blood returning to the heart, was far greater than could be accounted for by new formation of blood resulting from ingested aliment; thirdly, a far more careful examination of the anatomical facts than had been made by Harvey's predecessors. To the careful study of the heart's valves the important discovery of the valves of the veins, due to Fabricius, was now added, and was for the first time interpreted. Finally the whole was illumined by the light of the comparative method, by the examination of the foetal circulation on the one hand and of the vascular systems of the lower vertebrates on the other. The motto from Aristotle prefixed to his lectures shows that the comparative method was his guiding star.*

Leaving this part of my subject I pass now to the consideration of the effect produced by Harvey's discovery on the progress of medicine.

It was obvious that Harvey had struck into a new path. His discovery was assuredly the most momentous event in the history of medicine since the time of Galen. It was the foundation stone of scientific medicine. It was the first attempt to show that the processes of the human body followed or accompanied each other in accordance with laws as certain and as definite as those which Kepler was at that time revealing in the solar system, and Galileo in all moving bodies on the earth's surface. Henceforth it became clear that all laws of force and energy that

* The motto is taken from the sixteenth chapter of the first book of Aristotle's work on the *History of Animals*: "The organs of human beings are less known to us than others: so that we must examine them by reference to those organs of other animals to which their nature is similar." I translate from the Greek, Harvey's Latin being obscure.

might be seen to prevail in the organic world were applicable to the human body. As an engine performing work, the heart stood on the same footing as any of the ship-building machines the operation of which Galileo had so carefully studied in the arsenals of Venice. The action of fluids in closed vessels under pressure was investigated in Harvey's youth by Stevinus, and in his later life by Pascal. The results were applied at once to the contents of the human vascular system.

Still greater prominence was given to Harvey's achievement by the all-embracing philosophy of Descartes, which during the latter part of Harvey's life had secured dominion over the intellect of Europe, and which retained it through the remainder of the seventeenth and a large part of the eighteenth century. That Descartes was among the first to appreciate the importance of Harvey's work has been often mentioned. Yet the question has not so often been asked, Why should Descartes, absorbed as he was in a general philosophy of the universe and of the human mind, have taken special notice of Harvey? It was extremely rare for Descartes to mention the name of any contemporary. I cannot call to mind in his writings more than one or two instances of his doing so. The explanation, as I believe, is this. Descartes had put forward a vast scheme of evolutionary philosophy, in which all the phenomena of the universe were to be explained as resulting from successive differentiations of a primitive homogeneous matter to which motion had been imparted. The scheme embraced the motions of the solar system, the forces of light, heat, gravitation and the phenomena of living beings—all these being conceived as successive differentiations of primitive rectilinear motion impressed on the ubiquitous ethereal substance with which space

was filled. In his view there were no facts in nature which were insusceptible of explanation on mechanical principles, and which could not be deduced from such principles by a sufficiently powerful mathematical calculus. He had himself taken the first decisive step towards the construction of such a calculus in his *Geometry*, published in 1637, leaving further steps to be taken half a century later by the infinitesimal analysis of Leibnitz, Newton, and the Bernoullis.

In his treatise on the nature of man Descartes had seized on the facts of the reflex action of the nervous system as illustrations of the automatic mechanical process by which the most complicated phenomena presented to our consideration could be explained. He welcomed Harvey's discovery as a yet more conclusive example of the applications of the new philosophy. The course of the blood, hitherto conceived as governed by vital spirits, by a vegetative soul, or by some other metaphysical figment of a like kind, was now seen to be determined by natural forces, to be regulated by the same laws of motion as those which governed inanimate matter. We know from the immortal prelude to his *Philosophy* his *Discourse on Method*, how high were the hopes which Descartes founded on the future of biological research. "Health," he says, "is the first of good things and the foundation of all other good things in this life. For so close is the connection of the mind with the temperament and the arrangement of bodily organs that if there be any instrument for making the mass of men wiser and more skilful than they have been till now, I believe that medicine is the art wherein to look for it. It is true that the medicine now in use offers little that is strikingly useful. But though I have no purpose to disparage it I

feel sure that no one, even of those who now practice it, will deny that what is known is but a mere fraction of what remains to be discovered ; and that we might gain freedom from a multitude of diseases both of mind and body, and perhaps also from the enfeeblement of old age, had we sufficient knowledge of their cause and of all the remedies with which nature has provided us."

Thus it was that under the combined influence of Harvey's discovery and of the Cartesian philosophy the vision of scientific medicine, the application of the laws of nature to the art of healing, dawned upon the world in the first half of the seventeenth century. It is worth our while to inquire with what results. Comte has remarked on the fact that the two initial discoveries of physics and of biology, the law of falling bodies and that of the circulation of the blood, were made simultaneously ; and he has contrasted the immediate sequel in each case. Galileo's discoveries led by direct roads on one side to Newton and scientific astronomy, on the other to Torricelli, Pascal, Boyle, Mariotte, Black, Watt. To what did Harvey's discovery lead, and why the difference?

The truth is that the medicine projected by the ambitious brain of Descartes was from the first foredoomed to failure. It aimed at satisfactory explanation of the facts of living organisms by the laws common to them with other kinds of matter ; it recognized no phenomena exhibited by living bodies that could not be so explained. Biology was to Descartes a corollary of physics ; it was not an independent department of science, with physics for a foundation, but having a superstructure peculiar to itself, requiring inductions of its own, methods of its own ; it was a body of knowledge which was to be made amenable as soon as possible to mathematical

treatment. This mode of regarding the subject imported into medicine a spirit of reality, of certainty and of precision which had never before belonged to it; but in each and every case the attempted solution fell short of the mark. There remained always a residuum that could not be accounted for in this way. Hence during the seventeenth and eighteenth centuries two opposing schools of medicine—the first fastening upon the lower, more general laws which were susceptible of precise determination; the second dimly recognizing the existence of certain higher and more special truths, which, however, they were unable to quantify or even to discern with clearness.

Before describing the opposition of these schools, let us take stock of the scientific material available for medicine in the middle of the seventeenth century. We have already seen that in all that related to mechanical force as applied either to solids or fluids the first great steps had been taken by Galileo and Stevinus. By Galileo's principal disciple, Torricelli, a discovery had been made the importance of which to medicine cannot be over-estimated—the discovery that the atmosphere had gravity, and that its pressure could be precisely measured. For the first time in the history of medicine the mechanism of the respiratory function became intelligible. It was seen to be a simple result of atmospheric pressure consequent on certain muscular contractions which enlarged the thoracic cavity. To Borelli and to Mayow of Oxford the credit must be given of first describing the respiratory apparatus with unmistakable clearness and accuracy. To Mayow also is due the first, or nearly the first, attempt to explain the chemistry of respiration.

On the subject of heat, its formation, its propagation, its relation to mechanical force, and its connection with

vital action, there was complete, or almost complete, ignorance. Descartes, indeed, with the prescient instinct of genius, had put forward the conjecture that heat, like light, was a violent, insensible motion of the ethereal substance pervading the universe. But no proof was offered, no relation of this insensible molecular motion to molar motion was indicated ; and the conjecture was buried with many other far cruder hypotheses of this great philosopher, to be revived in our own century. On animal heat the beliefs of physicians were of the most fanciful kind, and were in no respect sounder than those which had prevailed since the time of Aristotle. Descartes—and Harvey seems to have been in the same case—was content with the old view that the heart was a spontaneous source of heat. By this heat Descartes—deviating here from the sounder view of Harvey—held that the blood on entering the heart expanded ; such expansion being the principal motor force which, when the mitral valve was closed, propelled the current of blood through the body. A full century was to pass before Black and Lavoisier were to place the study of heat on a scientific foundation.

The second great hiatus rendering a scientific grasp of vital facts impossible was the absence of anything that could be called a science of chemistry. We know life as a series of chemical changes, anabolic and katabolic ; old substances decomposing, new compounds arising in their place. This continuous metabolism, following predetermined paths, is the distinctive fact of living organisms ; that which most obviously demarcates them from inorganic matter. No event that takes place in a living body, no function of any organ, is intelligible without it. Yet of the chemistry of life Harvey, and the generation following Harvey, were entirely ignorant. A few metals had been

added to the list of those found in the virgin state and known to the ancients, the principal alkalies and some of the mineral acids had been discovered, and several mineral salts had been investigated. But no step of the first importance had been taken since the time of Paracelsus; and, above all other deficiencies, there was no pneumatic chemistry. John Mayow, indeed, had a strong, though dim, apprehension of the fact that something was contained in nitrate of potash, of an ethereal volatile nature, akin to the respirable atmosphere and essential to the maintenance both of life and of combustion; and I know nothing more interesting in the history of science than to trace in his works this clutching at the discovery of oxygen, which yet eluded his grasp and that of other searchers after truth for a hundred years. The composition of air and water, the difference between air and other gases, remained undiscovered. Combustion was explained by the comprehensive though false theory of phlogiston, the ethereal substance endowed with negative gravity; a theory destined to hold its ground so tenaciously that even Priestley, a century afterwards, could not escape from its shackles. The chemistry of respiration remained unknown. Harvey, to whom both the mechanism of this function and its chemistry were alike obscure, has told us in his printed work, and still more clearly in his manuscript notes, how obscure a problem the whole subject of the lungs was to him, how great an obstacle to his discovery. Before birth the lungs were not needed for the circulation of the blood. Why should they become necessary afterwards?

As the scientific study of life presupposes a clear apprehension of these physical and chemical laws, it is abundantly clear that in Harvey's time a scientific

conception of life was not possible. And since the art of medicine rests, or at least is ultimately destined to rest, upon biological science, it follows that medicine regarded as a scientific art—an application, that is to say, of scientific principles to particular cases — must have remained throughout the seventeenth and the first half of the eighteenth century extremely crude and imperfect. Nevertheless, in the seventeenth century the attempt was made for the first time to found medical art on such scientific laws as had been then discovered. Harvey was not, perhaps, the conscious originator of this line of action ; it was rather due to the stimulating influence exercised by the scientific philosophies of Galileo and Descartes. Still Harvey's discovery of the circulation was unquestionably the starting-point from which it proceeded. It is worth while, as I have said, to watch closely the course of this procedure. For if much is to be reaped from the history of truth, something may also be gleaned from the history of error.

Of Harvey himself we are told that after the publication of his discovery his practice fell off ; the implication being that the propagation of a new truth aroused hostile prejudice and alienated those who had previously consulted him. Is there any valid proof of such alienation ? By this College he was from the first held in profound respect ; he enjoyed Royal favour so long as there was a king in England. Under the Commonwealth his old age was passed amid every sign of universal regard. I hope it will not be attributed to disrespect of so great a name if I suggest that among the reasons for diminished success in the practice of his art, one may have been that his great discovery reacted upon it unfavourably. Had that treasure of his *Medical Observations* to which reference is so often

made by him, been preserved to us, we should be able to answer this question with some certainty. As it is, we can but express a doubt whether the dazzling splendour of a new truth may not have brought about a temporary blindness to the old; whether this one function of the circulation, accurately and precisely determined, may not have seemed so overwhelmingly important, by contrast with the nebulous haze in which other functions were still enwrapped, that the observer was tempted to account for the myriad phenomena of disease by disturbances of a single organ, and lost his power of regarding the organism as a whole, on which, nevertheless, the art of medicine has rested since Hippocrates, and must for ever rest. If this were so, it was not to be the last time in the history of modern medicine in which the two opposing processes of analysis and synthesis came into disastrous conflict; for that history records analogous reactions on medical practice of almost every important scientific discovery.

What happened in Harvey's case we do not and cannot know. But as to the effect of his discovery on subsequent theories of medicine we are not left in doubt. A school of medicine arose, commonly known as the iatro-mathematical, which numbered many distinguished names, and held its ground for nearly a century, avowedly based on Harvey's discovery, and having for its aim the explanation of vital phenomena by mechanical forces. Some of the most important representatives of this school may be here mentioned.

The first on the list is Giovanni Alfonso Borelli, born thirty years after Harvey at Naples, a professor of mathematics and of medicine at Rome and Pisa. He died in 1679. His great work, *De Motu Animalium*, appeared the year afterwards. He was the first to analyze distinctly the

operation of the muscular system, and to attempt to assign with mathematical precision the exact mechanical energy exerted by each muscle. Before his time it had never been realized that the bones were levers and that the muscular tissue was the moving power; the resultant action depending on the angle at which the force was exerted, and on the distance of the point of insertion from the centre of articulation. So long as the problem was one of elementary statics he was on safe ground; but many of the problems handled by him needed a higher calculus than was in his possession, and here he made serious miscalculations. The important step was, however, to break ground in this new field, to regard muscular energy as a measurable quantity.

Borelli framed a careful and elaborate theory of muscular contractility, beginning with criticism of the explanations hitherto offered. The muscle in contracting shortens. What makes it shorten? Some had compared it with what takes place in a rope when a weight attached to it is lifted, and successive parts of the rope become slack as the work is done; but in the muscle the contraction is simultaneous throughout the whole length. Secondly, the contraction of muscle is not elasticity; this would imply previous extension, and shortening could only take place to the point from which extension started. But, thirdly, could it be said that the contracted muscle is in a state of strain, which being removed the muscle shortens? If so, effort would be felt in the state of rest; while if any exertion was made there would be a feeling of repose. Again, it had been suggested that muscles contract by animal heat, as hair and other animal substances contract on scorching. Of such a rise of temperature there is no evidence whatever. Once more, muscular contraction had

been compared to the corrugation of worms or snakes, but this corrugation is itself the result of muscular contractions. Finally, he dismisses with scorn the view held by some that the process was not a mechanical one at all, but a vital one. "As though nature," he cries, "could dispense with the laws of destiny fixed by divine wisdom !"

What, then, takes place when a muscle contracts? Some bodily substance, he conceived, is transmitted by the nerves to the muscular particles, creating an explosion or ebullition, as when oil of vitriol is poured on chalk, or water on quicklime. So long as this nervous juice continues to be distilled into the muscle, effervescence goes on, the fibres of the muscle are driven apart as by a wedge, and shortening of the muscle results. When the supply of nervous juice ceases things revert to their former state.

Borelli's theory of nutrition was equally mechanical. Over-estimating the force of the heart as a mechanical agent, he conceived the blood as rushing through the vessels with sufficient force, first, to drive away worn-out particles from the tissues and eliminate them through the pores or otherwise; and, secondly, to rebuild the tissues by wedging in new particles adapted to the shape of the pores, just as in mosaic work stones of various shapes are fitted each into its proper place.

This sample of Borelli's physiology will prepare us for his pathology. The central fact for the pathologists of that day was fever. What was Borelli's theory of fever? The accepted view was that it was a heat kindled in the heart. A fermentation was supposed to be set up in that organ, the result of which was to set free the spirituous and sulphurous parts of the blood, and thus to bring about the quick pulse and other phenomena of constitutional disturbance. "But where," asks Borelli, "is the proof that

the heart is the scene of these chemical processes? What warrant have you for saying that the heart is hotter than the rest of the body? I," he says, "have tested the matter with a thermometer and can find no difference.* As to ferments contained in the heart, the lining membrane," he continues, "is perfectly smooth, and a torrent of blood rushing through it would sweep the imaginary substance away with it. Besides, it is easy to show by injection of hot substances into the blood that heat will not produce fever. No; it is not heat that causes the rapid motion of the blood, but the rapid motion of the blood that produces fever. My theory of muscular action explains it. During fever the nervous juice is poured out into the heart and all the involuntary muscles in abnormal quantities and arouses them to increased action. After a time the voluntary muscles cease, from the same cause, to be voluntary, and these also are convulsed." Borelli was no doubt obliged to imagine some other cause at work to produce this excess of nervous juice. Either that juice was poisoned by some ferment in the glands which were richly supplied with blood, or the nervous tubules were mechanically obstructed and the fluid contained in them fermented. In any case the visible symptoms of pyrexia—the heat, the swelling, the redness, the pain—were due entirely to mechanical causes. The essential facts in fever were, in Borelli's view, facts of hydraulics.

His followers, Lorenzo Bellini and Archibald Pitcairn, carried out the same view in a still more systematic way. Their names may be forgotten now, but in their own day their fame was European. Pitcairn was a native of Edinburgh, and practised medicine in that city, where he was

* This, by the way, is the first instance known to me of the application of thermometry to animal physiology.

the leading physician. He had previously occupied a chair at two foreign universities of the highest repute, Montpellier and Leyden. In the latter city the illustrious Boerhaave was among his pupils. It is to Pitcairn that Lorenzo Bellini dedicated his work.

Pitcairn's remarkable work, *Elementa Medicinæ Physico-Mathematica*, is a systematic treatise on medicine, beginning, as was usual at that time, with a statement of physiological principles. This is interesting if only as evidence of the overwhelming importance attached by his school to the discovery of Harvey. Life and the circulation of the blood are identical, he says ; life *is* the circulation ; there is no independent life of the parts. It is the body which lives, not any part of the body. Circulation, which is life, depends not on parts but on the whole. "Dividitur corpus in partes continentes et contentas, id est, canales et liquores." Vessels and the contents of vessels make up the whole substance of the body. The differences between one body and another were differences in the fluidity or viscosity of the contained liquids.

Then follows his explanation of what was rightly looked on as the fundamental problem of animal heat. He conceived heat to be an explosive substance locked up in certain particles of the blood, and liberated by the attrition of those particles ; this attrition, of course, proceeding more rapidly as the circulation was more vigorous. The notion that animal heat resulted from a certain residuum of blood left in the heart, and continually fermenting, he scornfully rejected, as Borelli had done. There could be, he said, no such remnant. The lining of the heart was smooth, and the whole mass of blood swept through it and passed on. To invoke the chemistry of

fermentation was needless. Mechanical causes accounted for the whole.

For the pathological fact of fever, or at least pyrexia, mechanics supplied sufficient explanation. "By the word fever," he says, "I understand the velocity of the circulation uniformly increased in equal intervals of time." Increased motion of the blood produces rarefaction, as blood flows more rapidly from capillaries to veins. On rarefaction follows increased secretion of nervous fluid; on this again increased action of the heart's muscular tissue, hence a quicker pulse, so that the effect of increased cardiac action also becomes its cause. The classical symptoms of fever—flushing, swelling, pain, want of sleep, convulsions, hæmorrhage, cutaneous eruption, parched tongue, thirst, anorexia, loaded urine—are each in turn explained as the result of mechanical processes.

Intimately associated with Pitcairn was Lorenzo Bellini, one of Borelli's pupils, who carried on the same line of research in an even more systematic way. The problem specially attacked by him was that of secretion, attributed by the chemical school of physicians to the action of ferments. For this school the familiar fact of fermentation, with its attendant phenomena of effervescence, heat, change of substance, etc., did duty as the one solitary representative of the vast domain now known as organic chemistry. It had very naturally and legitimately forced itself upon the attention of these men, offering as it did a prompt explanation of a multitude of obscure facts. The liver was supposed to secrete bile by virtue of its ferment; so did the pancreas, so did the salivary glands, the kidneys, the gastric mucous membrane; nay, as we have seen, the fact of animal heat itself was supposed to be elucidated by an imaginary ferment residing in the heart and acting on the

blood as it passed through. Everything could be explained in this way. Men soon become the slaves of words; and so here the word "fermentation" (which in reality held the clue—as two hundred years afterwards we have come to see—to some of the hidden secrets of life and disease) became a mere metaphysical figment like the dormitive influence of opium in Molière's play. It solved hard problems by the simple process of restating them in obscurer and more pedantic language.

Against these crude chemical theories the mechanical school of physicians, with Bellini at their head, waged fierce battle. "What sort of an explanation," he asked, "do you arrive at by your theory of ferments? If secretion is caused by a ferment contained in a gland, then what is it that secretes that ferment? Suppose, for instance, that bile is secreted from the blood by some special ferment; that ferment requires a second ferment to secrete it, and that second yet a third, and so on without end." But in truth the whole of this chemical apparatus is, he maintained, unnecessary if we think for a moment what is meant by the cohesion of particles of matter. Two molecules press towards one another with a given force and in a given direction. Change the force and the direction, and we have a new arrangement of molecules—in other words, a new compound. To effect this change some external force is needed, but this need not be a ferment; the action is mechanical, not chemical. Secretion is the separation of certain elements of an animal fluid from the rest. Now we see this separation taking place outside the body without these imaginary ferments, as, for instance, after blood-letting, in the separation of the clot from the serum. What takes place outside the body may take place inside. "See again," he continued, "what takes place when blood is

placed in a vessel and subjected to Mr. Boyle's new machine for extracting the air. Ebullition and evaporation ensue; that is to say, certain portions of liquid at once separate from the others, which had previously been held down in contact with them by the pressure of the superincumbent atmosphere. So it is that inside the body changes of mechanical pressure suffice to explain all that takes place. A gland is simply a closed vessel with extremely small perforations of different shape and size. What takes place in it is as purely mechanical as what goes on in the formation of a blood-clot or the filtering of fine sand from coarse. There is not the slightest necessity for complicating the matter with ferments. *Deus naturæ conditor est Deus facilitatis* (God does everything in the simplest way)."

As time went on the potent mathematical calculus of Leibnitz, Newton, and the Bernoullis held out increasing hopes of being able to overtake the subtle processes of nature, and of anticipating direct observation by a reasoning process. Dealing with the infinitely little as well as with the infinitely great, prepared to represent every natural form, even the variations of each human countenance, by an algebraical equation, it seemed to them that they were entering on a path leading directly to omniscience, and surely capable of unravelling the intricacies of life and of disease.

It would be interesting, were there time to do so, and it would not be uninteresting, to trace the influence of this extraordinary scientific stimulus upon the great physicians of the early part of the eighteenth century, more especially upon Boerhaave, a pupil, as I have remarked, of Pitcairn, and upon Richard Mead. In Boerhaave's theory of fever the excited pulse indicated the effort of the heart to sweep

away, as by a flood tide, the obstruction in the capillaries ; and a similar attempt to explain biological facts by the mechanical forces of the circulation is to be noted in Mead's discussion of the operation of poisons. But these great physicians were preserved by the wise empiricism of their clinical instinct from the extravagances that beset more one-sided men.

Thus it was that the devotees of the two great sciences of mathematical physics and of chemistry—the one brought to a high degree of perfection, the other crude, imperfect, struggling to be born—strove strenuously for their exclusive application to the art of medicine. The iatro-physicists were far more fitly furnished than their adversaries with the armament of scientific discovery. They had arisen with Galileo and Harvey ; they were carried triumphantly onward by Torricelli and Pascal, by Boyle, Newton, and the Bernoullis. The great discovery of Harvey was their own domain ; to extend its application to every bodily function was the goal of their efforts. The chemiatic school, on the other hand, could rely only on the sinister though seductive memories of Paracelsus, and on the dawning hopes of a future which they were not to witness.

The struggle was watched by a third school of medical investigators, who saw weak joints in the armour of both the combatants. I refer to the animist school, which arose at the end of the seventeenth century under the leadership of Stahl. He was the most prominent chemist of his time. His hypothesis of phlogiston was accepted as a satisfactory explanation of combustion for three-quarters of a century. But Stahl felt, in a confused, dim, strenuous way, that the facts of life—the selective, coördinating, pre-arranging processes presented by the humblest animal or plant—were not to be accounted for by the play of

mechanical or chemical forces. So strong were his convictions on this point that his Archè, or Vital Principle, dispensed altogether with mechanics and chemistry. It was a metaphysical figment, involving error at the least as gross as that against which he contended ; but within the husk lay the germ of an all-important truth.

Later in the eighteenth century the discoveries of Black, Cavendish, and Lavoisier fulfilled the preliminary conditions for the evolution of biology as a distinct science. Haller, Hunter, Bichat, and others brought that science to the birth. From that time to this it has become more and more plain that physics, chemistry, biology are distinct sciences, with methods of their own and inductions of their own, each of the latter terms in the series using the results of its predecessor and adding new results of its own. Life is a structure built up of physical and chemical facts. Yet to the building, to the arrangement, to the ordering of those facts there goes something that neither physics nor chemistry can explain any more than algebra can explain the behaviour of a magnet. To strive to interpret the series of events which make up the life of an animal in terms of chemical metabolism or of conservation and expenditure of energy is an endeavour which will fail ; though it is a useful endeavour, because only thus can we eliminate what remains. That something remains the greatest of living British physicists has always maintained and has recently assured us. The admitted insufficiency, to take one instance from a thousand, of Lavoisier's theory of combustion to account for the phenomena of animal heat, the admitted necessity of seeking in the nervous system for a thermotaxic centre or centres to account for the amazing adjustments of the organism to changes of temperature in the environment, might suffice to convince the

biologist that, though he receives his building material from the physicist, he must construct the edifice for himself.

The history of medicine is a strange and fascinating though sometimes a melancholy record. We see in the fifth century before our era a man of genius, gifted with that marvellous union of the observing eye with constructive imagination which astounds us in the sculptors of the Parthenon, building up without science, without anatomy, the fabric of medical art of which what we still practise is but the enlargement. Inheriting from the priestly guild from which he sprang a vast store of observations, and adding yet more of his own, Hippocrates was guided in dealing with them by two fundamental principles—(1) that diseases, like other phenomena of nature, follow a natural sequence; (2) that the organism of man, however complex, is yet an individual whole, each part receiving and impressing reactions on every other. After Aristotle and Galen had done their work, long centuries ensued of blind and sterile routine, followed by a period of acute but one-sided analysis. By the help of such analysis it may be that the Hippocratic synthesis will be again built up on a more enduring basis.

The ideal perfection of medical art rests upon an equally ideal perfection of the science of human nature, summed up in complete knowledge of our organism and of the influences that act on it. The goal is unattainable, yet till it be approached the physician must be content with empirical knowledge of an infinite array of facts—biological, psychological, ethical, which, though certain as mathematics, yet do not admit of quantitative determination. It is only within the last generation that the word "subjective" has become familiar to the biologist. As the

student of sensory organs deals with some of these subjective facts, so does the student of human passions deal with others, for these, no less than sensations, are functions of our organism. To determine the way in which this or that man will be affected by any morbid process without taking account of such facts is assuredly impossible. They must be taken into account at all costs ; if not by scientific process, then by wise empirical instinct.

I shall conclude with saying that as medical art has been affected by the rise of physics and chemistry in the seventeenth and eighteenth centuries, so will it be affected by the scientific sociology of the nineteenth and the twentieth.* Not till science has fully embraced every aspect of human life can medical art, as founded upon science, hope to be complete. But at the dawn of modern science in the seventeenth century the dazzling brilliance of mathematical and physical discovery led the keen and daring minds of whom I have been speaking to the belief that all phenomena with which the physician deals could be spoken of in terms of mechanics. It was a legitimate and inevitable stage in the progress of the human mind. Without it the later stages would have been impossible. It initiated the great discovery of Harvey, whom not merely we, but future generations, will continue to venerate as the principal founder of scientific medicine.

* As this remark perplexed some of my hearers, I would refer them to the 127th section of the first book of the *Novum Organum*. It was because of Comte's attempts to carry out the programme there contained that G. H. Lewes, no blind adherent, spoke of him as the Bacon, and "something more than the Bacon," of the nineteenth century. That Comte was preceded, and that he has been, and will be, followed in those efforts by other thinkers is obvious. And it seems reasonable to suppose that better knowledge of Man will lead to better Medicine.

B.—HEROES OF LITERATURE

I

DANTE'S POSITION IN THE HISTORY OF HUMANITY *

WHAT is the position of Dante and Dante's work in the history of Humanity ?

Its continuity with the Past may be made clear in two words. Dante is guided through Hell and Purgatory by the great Roman poet Virgil. The *Æneid* of Virgil is an imitation for the cultivated Romans of the time of Augustus, of the *Iliad* of Homer, said or sung to the warriors and sailors of the Greek coasts and islands nine centuries before. Homer, Virgil, Dante ; Greece, Rome, the Middle Age. The chain is complete so far. Of the continuity with ancient Theocracy through the prophets and lawgivers and psalmists of Judæa I need not speak. He shared it with the Church of his time.

He has been called the voice of the ten silent centuries, the ages that we have at last begun to leave off calling dark ; the ages in which few brilliant books were written, but in which heroic and saintly lives were being spent in building up that Catholic Church which Comte has called

* A portion of a lecture on Dante, delivered on November 24, 1889. The first portion of the lecture exists only in the form of rough notes.

the masterpiece of human wisdom: the first systematic effort made in the history of the world to institute a government of the hearts of men, and thus to secure for the first time freedom for their actions. And this view of Dante is true also. His Paradise is a glorification of the mediæval saints Augustine, Benedict, Bernard, Francis, Dominic, Aquinas.

But there now comes before us this further question: Continuous with the past history of Humanity, what is his relation to her Future?

First I ask, Was Dante an orthodox Catholic? or did he belong to the party of destruction? Some have thought one thing, some another. You have not forgotten his fierce denunciation of the corrupt Popes of his own time. Martin Luther never wrote or said anything so strong as the 19th canto of the *Inferno*. Three times in the Paradise the same denunciation is uttered; and it comes with singular and emphatic symmetry at the 9th, the 18th, and the 27th cantos, as if to show how deeply such thoughts entered into the structure of his poem. Again, in that central part of the whole poem, where Beatrice, on the summit of Purgatory Mount, shows him the triumphal procession of the Church, the triumph seems suddenly to be transformed into utter defeat. The eagle and the dragon destroy the sacred car; the powers of earth and hell, the corrupt Kings and corrupt Popes, seem utterly to prevail.

Nevertheless, after reading many times everything that Dante has written, I am persuaded that he died a sincere Catholic. He is said to have joined the third order of St. Francis, and we may well believe it. There were plenty of emancipated statesmen and men of letters in Dante's time; some of them strong men, like Farinata and the

Emperor Frederic II.; some men of high culture and feeble character, like Guido Cavalcante and many of the minor poets with whom Florence abounded. Nothing was more common in the Italy of Dante's time and the centuries that followed than men, who had no intention of being martyrs, but who had no religious belief whatever. I think it probable that Dante was at one time of those, and that during his exile, under the influence of Aquinas, he worked his way round painfully but surely to an acceptance of Church doctrines, the destruction of which in the fourteenth century would have brought such moral misery on the human race. I believe that the bitter repentance of Dante on his meeting with Beatrice has, like everything in the poem, more meanings than one; and that one meaning, though not the only meaning, is, that in the presence of the glorified Beatrice, the embodiment of the highest spiritual wisdom, he confessed with penitence his breaking away from the Catholic faith. I cannot doubt that Dante died in sincere communion with the Catholic Church.

But none the less does it remain true that what a man thinks that he believes is one thing; and what the real outcome of his thoughts may be has often been quite another. And I still ask the question, Comparing the teaching of Dante with the teaching of the Church, how far do they coincide? In some points they seem to differ.

In the first place, Dante assumes the function of a Judge. He, a student of theology, but a mere layman, brings the whole society of his time and of past times before him, the highest leaders of that society especially in Church or State, and glorifies or condemns them, as to his judgment seems right. He is wholly without self-conceit; he is proud, but without the least taint of vanity: before

the great leaders of the Church, from the Apostles to the saints of his own century, St. Aquinas and the rest, but above all St. Francis and St. Bernard, he bows reverently. He does not set up for being a saint himself; highly endowed he knows himself to be, but also stained with memories of error and sin; but the spirit within him forces him to judge between right and wrong, and to point out as it were in a scale of twenty-seven degrees, with many subdivisions, the different shades of right and wrong. He writes with a distinct ethical purpose. As the blasts blow most strongly against the mountain-tops, so the vials of his indignation are poured out against the most illustrious sinners, so that men's minds may listen more keenly to his teaching. He is well aware that he is speaking to the future more than to the present. This function of judgment, thus assumed by a Catholic layman, was something wholly new in the world.

Further, the standard by which Dante judges is not altogether the Church's standard. I will take one instance. In the *Inferno*, he has nine scales of guilt in descending order, the lowest circles given to the vilest sins. Now see the startling difference in the space allotted to those circles. The *Inferno* has thirty-four cantos. The first three are introductory. There are thirty-one left for the description of the various kinds of sins. Seven of the circles are disposed of in fourteen cantos. To the last two circles seventeen cantos are devoted, exactly half the poem. These two circles deal with fraud and with treason.

Note also that the eighth circle, that of fraud, containing as it does ten subdivisions, is wholly disconnected from the circles above it, by precipices as steep as the sides of a well, so that Dante is carried down to it through the air on the back of the monster Geryon. Fraud and treason

are thus wholly isolated from the other sins as something very far blacker than they. I have not found this startling difference of condemnation in the works of any theologian, or in the decrees of any council of the Church. But I do find it in the morality of feudalism and chivalry; in the feudal horror of disloyalty—in the execration of Ganelon, the traitor of Roland. In a word, the moral standard of Dante in this great division of his poem is feudal and human even more than it is theological or Catholic. Truth, honour, loyalty: these are feudal virtues.

Note, too, that whatever intrinsic virtue the worst of sinners possess remains with them to the last. Brutus, the traitor who assassinated his trusting friend, and brought infinite sorrow on the world, shares the lot of Judas; but in the very jaws of Satan he retains his courage. Ulysses, the fraudulent warrior, is credited with his adventurous spirit—Ugolino with his fatherly tenderness—Brunetto with his fine culture. Farinata, the infidel, is punished for his infidelity, but preserves his noble and fearless spirit; he rises up from his red-hot coffin as Dante passes with breast and brow as though he held hell in high disdain; and when he hears from Dante of the exile of his friends and their ruined hopes, says that news is greater torture for him than his bed of fire.

Dante's ethic, in fact, was the ethic not merely of a theologian, not merely of a feudal warrior, but also of a great citizen. It is the combination of these things that constitutes his singular position in history.

His ethic is essentially social and human, and not personal. Without citizenship, he says, a man is lower than the brutes. The intensity of his love for Florence stayed with him to the end. He would purchase return from exile by no humiliating concession; if only "thus they

will let me back to Florence, then to Florence I will never return. Have I not the sun and the stars?" He was unsparing in denunciation of her sins, her miserable factions, her avarice, her democratic caprice. But he loved to dwell on what she was in past times, on the simplicity of life of which his ancestor tells him, when "she lived in peace, temperate and chaste. She had no chains nor coronet, nor dames in rich attire nor girdle such as to be looked at more than the wearer." "I have seen Bellincion Berti go girt with leather and clasp of bone; and his lady leave her mirror with unpainted face. I have seen the Nerli and the Vecchietti contented with their sheep-skin coats, and their dames with spindle and distaff. Ah, happy life! each woman was certain of her burial place, none was left deserted in her bed by reason of France. One would watch over the cradle with the soft soothing talk that fathers and mothers delight in: another, drawing her thread upon the distaff, would tell tales to her household of Troy and Fesole and Rome. To this tranquil, honorable life of citizens, this sure and faithful civic bond, was I born, when the Virgin heard my mother's cries to her for help." Remember that the man who says this was a *soldier, and a Crusader.*

He is never weary of it. In the heaven of the stars he sees St. Peter and talks to him of Faith—and then again his thoughts go back to Florence and its beautiful Baptistery; with the longing thought that possibly he may see his home again. "If ever it befall that the sacred poem to which Heaven and Earth have set their hand, so that it has worn my bodily frame through long years of toil, shall overcome the cruel spite that bars me out from the fair sheepfold where I slept a lamb, hated by the wolves that make war thereon—with other fame thenceforth, with

other robes shall I come back a poet, and at my fount of my baptism shall receive the crown."—St. Peter gave the crown ; but he wishes that crown to be seen in Florence. . . .

One often asks, What were Dante's thoughts in those last years amidst the pine trees of Ravenna? Joyful they could not have been. The world was going from bad to worse. A glorious vision of the Church had been shown to him on the summit of the Purgatorial mountain. He saw her as the triumphal chariot drawn by the mystic creature that typified the union of man with God ; in the car sat Beatrice, his glorified Love, the source of his highest spiritual wisdom. Before it marched the procession of the ages, the saints, prophets, and martyrs of past time ; at either wheel the virtues danced, the four Roman virtues robed in purple, Wisdom, Fortitude, Temperance, and Justice : the Christian virtues to the right, Hope draped in transparent emerald, Faith with white like snow new-fallen, Love in the red of fiery flame ; and Love led the way.

Then came the end. The Roman eagle dashed down upon the car. From its fierce talons the Church was kept safe ; persecuting emperors did no harm : not so the kindly emperors from Constantine downwards, who gave rich endowments to the Church, so that Dante saw it become gradually a comfortable nest feathered with the eagle's down. Then the Dragon of sin rose from the nether pit and crashed upwards through the floor of the car, and finally the giant and the whore were seated there in shameless and loathsome embrace. Corrupt Popes and corrupt Kings. This empire gone [there were], Philip IV. of France, first in ungodly conspiracy with Boniface VIII., then in ungodly violence worrying him to his death at Amalfi ; Clement V. parading Southern France in open

adultery ; and after the nine years of Clement V. the nineteen years of John XXII. Of these Dante saw five only ; but at John's death in 1334, thirteen years after the death of Dante, there was found, says the accurate chronicler Villani (quoted by Fleury), in the treasury of Avignon the sum of eighteen million golden florins in coin ; in plate, crosses, crowns, mitres and other jewels and precious stones, to the value of seven millions, making a total of twenty-five millions, equal perhaps to two hundred and fifty million pounds of our money. I know this to be true, says Villani. My brother, a most trustworthy man, was a man who did business with the Papal Court, and he happened to be at Avignon at the time of the Pope's death, and had these facts from men who counted the treasure. He claimed fees on every Church appointment throughout Christendom ; and as no one was ever made a bishop at once, but as each bishopric fell vacant some other bishop was translated to it, and again some other to his post, and so on, each vacancy brought in six or more sets of fees. He was not a bad man, says Villani. He was sober and refined in his way of living. He rose every night to say his office : he said mass every day ; he was accessible to those who wished to see him : he despatched business promptly. He was learned, acute, and magnanimous. So says the chronicler—with truth I dare say. But such was the conception that Popes now had of their office.

This is the Pope of whom St. Peter, meeting Dante in Paradise, hides his head for shame ; and of whom Dante, in the sixth sphere, the heaven of Justice, of the Emperor Trajan, and of the Trojan Ripheus, speaks thus :—

“O thou noble star . . . may the most high God who gives thee motion and power, look whence issues the smoke that spoils thy ray, so that at some time hereafter he may be wroth at the

buying and selling within that temple whose walls were built with miracles and martyrdoms. O soldiery of the heaven on which I am now gazing, pray for those who are all gone astray after the evil example. Once men were wont to make war with their swords; but now it is carried on by taking away now here now there the sacramental bread which the Father of all locks up from no man."

[This alludes to the shameless abuse of interdicts and excommunications, and the fees extorted when they were removed.] Then passing to John XXII., and making allusion to the image of St. John Baptist carved on the gold coin of Florence, the florin, he burst out—

"But thou who writest only to sell the cancelling of thy writs, bethink thee that Peter and Paul who died for that vineyard which thou layest waste, are yet alive. Still this thou canst say: 'I think with such fixed longing on him who lived alone in the wilderness and who came to his martyr's death through the dancing of Herodias, that of Peter the Fisherman or of Paul, I know nothing.'"

The truth is that of the two institutions on which Dante relied for the salvation of society, the empire as a power which could keep order among the miserable factions of the Italian republics had perished fifteen years before Dante's birth, when Frederic II. died. The papacy as a spiritual force, uniting the Western nations into one, put forth its last expiring effort when Dante was a boy of nine years old, at the council of Lyons, to which the great doctors of the Church (I will add the greatest intellects of the age, Roger excepted), Aquinas, Bonaventura and Albertus Magnus, were invited by Pope Gregory to see how the wounds of Christendom could be healed.

Imagine for a moment Pope Leo XIII. inviting the greatest intellects of Europe—I leave you to fill up the list as you like—to Geneva to a congress where all would

use a common language, like Latin, which roused no national prejudice, and should set themselves to see how Europe could be saved from war, and how the intellectual problems of our time could be solved. That sounds a silly dream now ; it was not a silly dream, but very nearly an actual fact then. Reformers long for what they call the United States of Europe. So do I, if by that you mean the peaceful growth of small political communities, freed from the curse of imperialism and commercial wars, and international hatred and territorial annexation, whether in Tunis or Tonquin or South Africa—if you mean that the bond uniting these communities should be a spiritual bond—the bond of art and science, and friendly guilds of thinkers and of craftsmen sharing one another's hopes, and dealing with labour questions and art questions peacefully, and seeing that the great spiritual inheritance of Humanity is shared by all. Will that time come? I believe it firmly and fully. Nevertheless, between us and it a red mist hangs low down in the sky. It may be that it will pass away ; it may be that we shall yet have to pass through the valley of the Shadow of Death. Meantime I assert that some faint approximation to this vision of the future had been reached between the eleventh century and the thirteenth. The union of Western Europe against the Mahommedan was far from perfect. Think of what was to follow in the after time. Recall the hundred years' war between England and France, of the fourteenth to the fifteenth centuries : think of the confusion brought by Luther's onslaught on the fabric of the Church, of the horrors of the Spanish wars in Flanders, of Bartholomew's massacre, of the Thirty Years' War, which set Germany back for a century, of the commercial wars and the imperialist wars carried on in the last century and this,

and on the imminent danger of other convulsions yet to come. And remembering how much of all this (not all of it, mind, but much of it) has sprung from the lack of a common faith, a common hope, a common love controlling men's hearts and actions, we might well think that Dante, as he lay down in Ravenna to die, despaired of the future.

For it was no question of mere corruption of institutions, due to the shortcomings of this man or that, such as all institutions may suffer from. It was very far more than that. The papacy, after three centuries of corruption and disruption, was reformed by the extraordinary genius and energy of Loyola. Under the Jesuits during the last centuries it has exercised a very great influence in the world—good influence mixed with evil, but the good still preponderating, as I cannot doubt. It has produced many holy and devoted men and women. It has sheltered millions of men and women from spiritual death. It still remains by very far the most powerful of the Christian Churches, as men in Protestant countries are at last beginning to see. Nevertheless, it has ceased since the time of Dante to be the governing force. It has been a secondary influence, of great value. But the governing minds of the world have stood outside it and apart from it. What mind of philosophic power equal to Aquinas has arisen since his time to defend the doctrines of the Church against the countless assaults led with increasing vehemence by the Protestant reformers of the fifteenth and sixteenth centuries, and the deists and atheists of the seventeenth and eighteenth, the evolutionists of the nineteenth? Many respectable advocates have arisen; many of the greatest minds have expressed more or less sincerely a passive adhesion to the faith. But who has done battle

for it like Aquinas? Apparently none, since it is on him that the champions of the Catholic orthodoxy still rely.

But the plain truth is that Aquinas and the schoolmen, Dante among them, were themselves among the destructive forces. With heroic courage they brought the articles of the faith to the test of discussion, and that test it could not bear. Philosophy from Descartes to Spinoza and Hobbes, from Spinoza to the great thinkers of the eighteenth century, Hume, Diderot, Kant, has gone its course outside the Church.

Look round this room. I divide the thirteen busts* around it into four groups: (1) The old theocracy typified in Moses; (2) Homer, Aristotle, Archimedes, Cæsar; (3) Catholic feudalism: St. Paul, Charlemagne, Dante; (4) The modern group: Gutenberg, Shakespeare, Descartes, Frederic, Bichat. Now these are continuous. No link can be spared. The Middle Age could not have been, but for Greece and Rome: modern Europe could not have been born, could not have any spiritual life, but for the Middle Age. But still, if I ask myself the question, Does this last (fourth) group stand outside the Church, or inside? Modern Industry, Modern Poetry, Modern Philosophy, Modern Statesmanship, Modern Science—have those vast influences been rallied round the fabric of the Catholic Church, or is it quite otherwise? What answer can there be but one?

Let us then, still standing by Dante's death-bed and lifting for him the veil of futurity, ask yet this further question. True, the Deluge is coming; but what hopes of life and green leaf afterwards?

Well, let us begin with Dante's friend, Giotto the

* *I.e.* of the men commemorated in each of the thirteen months of the Positivist Calendar.

shepherd's son, the builder of the beautiful tower, the great initial force of modern painting. At Assisi the walls of the church built above the tomb of St. Francis are completely covered with Giotto's pictures: and those pictures are inspired by Dante. It is Dante's canto on St. Francis translated into colour. Those who are unfamiliar with Italian art—no one within walking distance of the National Gallery need be unfamiliar—will be surprised to find how large a part of it is inspired by Dante's poem. Look, for instance, at Botticelli's picture of the Coronation of the Virgin. The floor of the Cathedral of Siena is a reproduction of the canto of the Purgatory. I need not go on—Dante's poem gave an impulse to the whole cycle of Italian painters which cannot be overrated. They are in the truest sense his offspring. What is that picture which you see behind me but the translation into line and colour of the glorious hymn sung by St. Bernard to the Queen of Heaven with which Dante brings his Vision to an end; and which we too take as the fittest symbol of the supreme Love that guides our life and purifies our passion?

And on the poets Dante's influence was hardly less than on the painters. He is the founder of Italian literature. Petrarch owed everything to him, Boccaccio and Ariosto much, and thence his influence spread to Spain, to France, to England—Chaucer, Shakespeare, Milton, Byron received it either directly or through others. The last lines of Göthe's *Faust* bear the impress of the last canto of Dante.

So that if Dante could have lifted the veil of the future, which happily it is not given to man to do, he would have seen amidst all the storm and confusion that was to follow through five and six centuries, and how

much longer we know not, the eternal longing of man for an ideal life surpassing in beauty and nobleness anything that he has known in past ages. That longing, that Love which stirs the universe and the heart of man, is the ground principle of life; it leads to Progress, which is our goal. But aspirations for the ideal, however priceless, are not enough. Love may prompt the desire to seek the distant goal; but the road to it is the straight and painful path of Law. Beatrice could not lead Dante from star to star, unless he had passed the black pit of the dead souls, unless he had striven for Liberty up the toilsome path of Purgatory, unless by shaking off the fetters of debasing passion he had reached that true freedom which consists in self-mastery, renouncement, submission to a wisely ordered social state. Self-mastery each one may achieve; it is the first step to the moral order in Church and State for which we have still to wait and hope.

Therefore, though Dante created a great school of art and of poetry, the vision of that long line of painters and poets, glorious though it were, would not have satisfied him. He would have strained his sight yet further into the future to see if the reign of peace and orderly government were coming, bringing with it true freedom of man's will by the ascendancy of the highest Love and the servitude of baser passions. He would have joined hands, we cannot doubt it, with the man who, taking Love for the principle, and Progress for the end, made Law, physical and moral, the foundation of all wise action. I believe that Dante, however he may have been revered by others, could never be truly appreciated until the synthesis of Comte had been founded.

Dante was the singer of ten silent centuries. He was

the morning star of the Renaissance. He was all this ; but he is for us here, yet more. He is the herald of the wider and loftier Church of which the foundations are already laid, and which the coming centuries will complete. Meanwhile let us be content to lodge very simply and poorly in the builders' huts, and work heartily along with them.

II

THE BICENTENARY OF CALDERON *

IT is one of the distinguishing features of Positivism that it claims to introduce no fundamentally new principle ; it does but promote and regulate spontaneous forces already existing. What Comte did, what, in fact, has been done consciously or otherwise by all great social renovators, was to bring prominently forward certain deep natural tendencies, to rescue them from baser elements, and to give them systematic form.

A striking example of this procedure is his view which, at first hearing, seems so strange a paradox, of the affinity between Positivism and Fetichism. Yet on closer inspection it is seen that the renewal, widely changed and exalted, of those simple feelings of reverence, and awe, and love, called forth by inanimate objects in the world around us, is a tendency which has increased in modern times, and which is still increasing. All modern poetry, all modern art, bears witness to it. The affectionate care for animals, the love of flowers, the craving for solitude among the woods and mountains, the clinging affection for old buildings, I might add for old creeds also, even after reason has rejected them—these things are nearer akin than most of us are aware to the nature-worship of primæval races of men.

* This discourse was given in the rooms of the Positivist Society, Newton Hall, Fetter Lane, on May 29, 1881.

Now this strong current of thought and feeling was fully recognized by Comte. The affinity between Fetichism and Positivism is one of the most impressive and fertile conceptions of his philosophy. For to the Positivist the word Fetichism calls up something besides wild pagan ceremonies, or antiquarian treatises on folk-lore. It includes the poetry of Wordsworth, and the painting of Turner.

Closely connected with this matter is another very striking tendency of our time: the honour paid to great men of the past on the anniversaries of their birth and their death. Consider it closely, you will find that the desire to know every detail in the life of a great poet, or a great statesman, the reverence for the house where Shakespeare or Michael Angelo was born, or for the tomb of Dante, spring from the same root as the Fetichist love of outward nature which counts for so much as a spiritual influence in modern life. Our reverence and love flow over from animate to inanimate things. They become sacred to us. Even what might seem at first sight a mere shadow and abstraction, the fact that after a number of revolutions of the earth in her orbit, fixed not by any natural law but by a purely human arrangement at one hundred, we should pay special honour to the date of a great man's birth; this, as indeed the celebration of birthdays and other anniversaries, shows how natural it is for even abstract things and institutions like the Calendar, of man's devising, to be clothed with affection and reverence.

Be this as it may, the modern movement towards the revival of centenaries is in full accordance with every aim of Positivism. We should be slothful and sullen indeed did we hold aloof from it. We are striving to do in a more thorough and systematic way what is done outside

us on a far larger scale no doubt, and with the prestige of literary applause, but irregularly, capriciously, and far too seldom. We welcome these outbursts of public enthusiasm, whether it be for the memory of Dante, or of Molière, of Mozart, or of Shakespeare. That such beauty and genuine feeling should be possible is the deepest encouragement to us. For our aim is not to create anything afresh: it is simply to extend and systematize these feelings; to bring them into closer contact with the every-day life of men. In a word, we would revive these glorious memories once a year, not once a century. We would free them from any trammels of narrow nationality, if any there be, that still cling to them. And, finally, we would stamp a deeper meaning into these revivals by showing how each great life has played its own proper part in the vast drama of Humanity.

This last point it is that specially distinguishes the celebrations of great men that take place under the inspiration of Positivist teaching from an ordinary biographical notice. We do what others do, but we try to do it more systematically: that is, with greater precision and greater reality. Our endeavour is to look at each great life relatively to its social environment: in simpler words, relatively to the place it occupies in history. Life, whether of a plant, bird, or man, is the interaction, the adjustment, of organism and environment. And for a great man the environment includes all the influences of his country and his century.

Now, Calderon was a Spanish nobleman. He was born at Madrid in 1601. His genius was recognized by Philip IV., under whose protection he mixed in the great world of his time as a soldier and diplomatist, while sedulously practising his dramatic art. At the age of fifty he,

like the other great Spanish dramatist, Lope de Vega, became a priest. For thirty years he wrote religious dramas, of which more afterwards. He died on Whit-Sunday, the 25th of May, 1681. The house in which he died is still standing: and last week half a million of people came from every part of Spain and Europe to see it. We need not think that the age of pilgrimages is past. Perhaps it is only just beginning.

To-day a few Positivists, of very varied nationality, in Rio Janeiro, in Paris, in Rouen, in Stockholm, and here in London, are meeting together for the same cause. Outside Spain and the regions where the peninsular language is spoken, I do not know that any other commemoration of this great poet has been held; for men are slow as yet to overstep the limits of nationality. And yet one of the principal reasons why I am speaking here to-day is that Calderon was a Spaniard; and that it seems well that Englishmen should teach themselves how to pay due honour to the Spanish nation. Therefore I begin with a few remarks, first on the nation of Calderon, and secondly on his century. Knowing the environment, we shall better understand the life.

The five populations which, broadly speaking, make up what, dating from the time of Charlemagne, may be called the commonwealth of Western Europe, were arranged by Auguste Comte in a certain order of value. His views as to that order underwent a striking change in the course of his life. This at least shows how difficult and how important the problem seemed to him. Briefly the change consisted in this. In the *Philosophie Positive* the arrangement was as follows: France, Italy, Germany, England, Spain. The final arrangement was this: France, Italy, Spain, England, Germany.

Without discussing the general question of this order, which would take us too far, one or two points will help to explain the subject immediately before us.

I. By this order of arrangement, Comte meant to give his opinion not as to which nation had produced the greatest number of remarkable men, but which was best prepared, as a whole, for undergoing the social regeneration which he called Positivism. His appreciation of England, for instance, is sufficiently shown by the sixty-six English names which he introduced into his Positive Calendar. And he never failed to acknowledge the existence in England of a small minority who were likely to take the initiative in the regenerating movement, and to sustain its first efforts. But this is widely different from saying that the whole mass of the English nation were well prepared for the movement. And looking at England as a whole, Comte thought that some of those things which have made her so important in the world were not likely to help, but on the contrary were quite sure to hinder, the moral and social elevation of the great mass of her people.

II. Why was Italy placed second? For several reasons:—

1. Her very weakness was an advantage, morally and socially. It made her more willing to receive European influences, less inclined to absorption in thoughts of national aggrandisement.

2. That weakness was due to the temporal power of the Pope; and the very miseries which this anomalous institution brought upon Italy stimulated strong desires for social renovation.

3. To have kept clear of the moral and intellectual disturbances caused by Protestantism was, in Comte's view, a great advantage for a nation, even though it might have

checked for the time the growth of great men. Politically speaking, the most valuable aspect of Catholicism was the conception of a spiritual power making its real force felt; equalling and surpassing the temporal power in prestige. To live in a country where a priest, the son of poor peasants, could hold his head as high as the richest banker or the oldest duke, was, socially speaking, an immense advantage to the great mass of the people. It saved them from coarse and vulgar admiration of worldly success. No conquests of India, no inventions of power-looms, and steam engines, and telegraphs, no overflowings of populations into thriving colonies, could, in his eyes, compensate such an advantage as this. It has been well said that vulgarity is one of the forms of death. To this danger, at least, populations like the Italian and Spanish, by the very fact of being behind others in industrial progress, and consequently less keen in the modern scramble for wealth, are assuredly less liable.

4. And finally, the sense of artistic beauty, the love for poetry, music, and other arts, has been more widely disseminated in the mass of the Italian people than in any other. It is not a question of whether the schools of art now prevailing are good; we know that they have fallen, of late years, far short of those of Northern Europe. For our present purpose, it is less important to think of the cultivated few, than of the wide diffusion of artistic sensibility through the mass. In England there are exquisite connoisseurs of music and painting among our aristocratic and professional classes. We think Beethoven a greater genius than Rossini; we are probably right; but we should not forget that Rossini wrote an opera for every little town that he passed through; and that would hardly be possible in Shropshire or Suffolk.

III. Why was so high a place given to Spain?

Partly for the same reasons that applied to Italy. The Spaniard—like the Italian, like the Irishman, if you will, or the Pole, or the Tyrolese—was saved from cringing to noble birth, or high place, or vast wealth, by seeing the parish priest hold his own with the village squire. The bishop of his diocese—a peasant, perhaps, by birth—took precedence of the bluest blood in Spain: the Pope was supreme over kings.

Let us grant that the continuance of Catholicism in Spain, as in other countries, retarded the growth of science, and made her slower to accept the steam engine with its attendant blessings. Let us admit that great intellects rose less easily into prominence. Yet always this is to be put into the other scale. The nation, as a whole, has been saved from the deadening vice of vulgarity; it has not stooped so low as others to the worship of rank and wealth.

Add to this another advantage peculiar to Spain.

The Spanish nation had been knit together, as no other nation had been knit, by a common danger. While Norman was trampling on Saxon, and treading in the seeds of social antipathies that even yet have not been rooted from our soil, prince and peasant in the Asturian mountains were in the full swing of their long struggle for the recovery of their land from the Moor. The whole history of Spain till modern times lies there. One can hear the sound of the pibroch * in the old law latin of their earliest statutes, when at the cry of danger townsmen and herdsman were bid to rally from market-place or mountain round the common standard. Footmen in such

* See extract from *Fueros of Jaca*, quoted in Hallam's *Middle Ages*, ch. iv.

cases were of more avail than horsemen, and they knew their worth. The deepest sources of caste hatred were drained away. Such an education in loyalty, fraternity and independence, it has fallen to the lot of no civilized nation to receive. Loyalty to the king was stretched to the limits of oriental adulation ; but let the king try to infringe the charter, or to exact a rate in aid that had not been voted—the answer was decisive. The orders of his majesty are to be “obeyed, but not executed.” The plain farmer of Zalamea, if he be mayor of his township, will stand to the king in person, and do summary justice on his own officers, if need be. The meanest beggar, says an English traveller* who knew the Spanish people singularly well, holds his head high in Spain. Alms may be refused, but he is never treated with contumely.

Such is the nation which defied Buonaparte when all the rest of continental Europe was cowering under his heel. Without the immense advantages of wealth and insular position that England enjoyed, misgoverned, deserted by her governing classes,—her peasantry defied the most scientific machinery of war that the world had seen ; and from that time Buonapartism was doomed. Guerilla is a Spanish word. This was the country of Calderon ; and these were the reasons which led Comte to place that nation so high. In great discoveries, in large applications of scientific industry, in mercantile enterprise, Spain is far behind-hand ; but the lee-way can be made up more easily in these things than in some from which other nations suffer. Such defects cannot weigh down the balance when the union of brotherhood with personal dignity, the highest ideal of human life, is set in the opposing scale.

From the country of Calderon I pass to his century.

* George Borrow.

It was the century of the Thirty Years' War. Calderon was eighteen years old when this war began; he was in maturity of life when it ended. The treaty of Westphalia marks the moment when the two great forms of Christianity gave up their rival hopes of European supremacy, and accepted the limits which they held then, and which they still retain. Germany, Holland, Sweden, Britain, are Protestant still; Austria, France, Spain, Italy, are Catholic, though the word Catholic from that time lost its meaning. The hope of universality was gone.

Still, there was a breathing time; the deadly internecine strife was over; and for a hundred years, until the first blasts of the Revolutionary storm warned men of far greater changes yet to come,—till the middle of the eighteenth century,—there was peace. It was a time singularly favourable for the grander forms of poetry. After the fierce activity of religious war had stirred thought to its depths, the need for action suddenly ceased, and there was leisure for clothing strong public emotions in ideal forms. It is surely by no accident that we have at one and the same time Milton idealizing Protestantism in England, Calderon idealizing Catholicism in Spain, while Corneille, in France, chose his subjects from the course of Roman history, down to the point when it passes into modern life.

The apparition of great poets is no mystical or miraculous fact. Like every other fact of human nature or of society, it is the result of fixed laws—ascertainable with some degree of certainty, though, doubtless, never ascertainable with precision. Some of the elements in the case are worth considering.

All the three aspects of Logic, in Comte's large acceptance of the word, are concerned in Poetry: the

Logic of Feeling, the Logic of Images, and the Logic of Signs. There must first be Passion ; strong emotions of Love or Antipathy called out by certain things or persons. This is the fetichistic element in Poetry, the groundwork of the whole. Here is the Logic of feeling. There must, in the second place, be the power of vividly portraying the image of those things or persons, in such sort as to leave out all that is unmeaning and indifferent, and to dwell only on the striking and salient features abstracted from the rest, and often made stronger and more intense ; the transformation thus wrought being often so great that the image portrayed corresponds to nothing found in nature, being purely ideal, yet none the less resting on fact. This is the Logic of Images. And finally, there must be some clear statement, in speech of the ordinary kind, connecting these passions and images together. This is the Logic of Signs, the only kind to which the word has commonly been applied.

This applies to Poetry of every sort. Now it follows from this that the two forms of Poetry which appeal to the general mass of mankind, dramatic and epic, require three corresponding conditions. The emotions which lie at the root of the whole must be felt in common by all ; the habits of life from which the series of pictures is to be drawn must be sufficiently fixed and adopted by all ; the beliefs which connect these feelings and these images into a whole must be accepted by all.

A nation utterly divided among itself, with fierce wars of classes, with a small cultivated minority holding itself apart from the mass of the people, breathing a different atmosphere, admiring and loving different things ; or again, a nation distracted by religious controversies, part occupied in pulling down, part in galvanizing old forms

into factitious life, part in nursing the germs of future growth; how can such a nation be animated by those collective emotions, those common sympathies and antipathies, of which dramatic poetry is the outcome? The appearance of a great dramatic poet in England at the present moment is not easy to believe in. Our wars of classes, our enormous overgrown cities, in which East and West hardly know of one another's existence; our disputes on every article of faith, the absorption of our men of science in specialities, of our men of practical energy in the building of great fortunes; our moral reformers concentrating their attentions on the abolition of this or that institution, on the rooting up of this or that evil, but holding up no general ideal of good before the whole community to strive for;—an environment made up of such influences as this renders the existence of a great dramatic poet impossible. It becomes for the time a form of life as anomalous as the dragon or the phoenix.

But it was far different with the Spain of Calderon. The Thirty Years' War had ended. Spain, to use Comte's expression, was "saved" from Protestantism. This expression has scandalized many—let us see what it means.

The Catholic Church, as Cardinal Newman has so abundantly shown, was the result of a long evolution. Its dogmas grew very gradually, and were intimately connected, as Comte had pointed out (for no Catholic writer could see this), with the social organization that made it possible for the priest to hold his own against the king. It is difficult to find the creeds in the New Testament. The Divinity of Christ is very dimly expressed there: the Trinity not at all; the doctrines of Transubstantiation, and of the worship of the Virgin, no one assuredly could find who had not been taught them elsewhere. All these

things were of very slow growth ; you find more of them in Saint Augustin than in Saint Paul ; more of them in Thomas Aquinas than in Saint Augustin.

Now Protestantism, regarded as a doctrine, is an arbitrary arrest of that evolution at a fixed point. The hard and fast line was not drawn by all Protestants at the same fixed point, and here began the difficulty. By Lutherans and Anglicans it was drawn at the New Testament and Saint Augustin and the first four councils. By Calvinists the line was placed somewhat earlier. But to draw a line at all was a very difficult logical feat, which ended by overtaxing the powers of all who tried it. Interpret your Bible for yourself, so that you end by believing it ; use private judgment, but do not use it too much ;—this was a slippery foundation to build on.

The intellectual incoherence of Protestantism is too obvious to need much discussion. Socially it gave up the great characteristic of the Catholic Church : an independent priesthood that could resist the temporal power. If Christianity had been content to assume Protestant forms, the great civilizing influence of the Church from the third to the thirteenth century would never have arisen. Saint Gregory, Saint Benedict, Saint Bernard, Saint Dominic, Saint Francis, Saint Thomas, would have been impossible ; and the Christian Church would have been as impotent as it has shown itself to be in Russia. Protestantism then is so incoherent intellectually, and in its moral control of social forces so incompetent, that it has unquestionably exercised in many ways an enfeebling influence over the nations who have accepted it. It was necessary that part of Europe should be Protestant, otherwise the new remodelling forces to which we look for re-organization could not have arisen. If Descartes could not have found

a Holland to work in, his work could never have been done. The partial emancipation of Holland and England in the seventeenth century was necessary if only as a step to the total emancipation of France in the eighteenth. But, looking to the mass of the community, it was undoubtedly well in many ways for those nations who have been spared the incoherent agitation connected with Protestant controversies.

All this may seem a departure from my subject ; but we shall see that to understand the Calderonian drama without it is impossible.

That drama may be defined in a word thus : It is the ideal portraiture of the life of a Catholic and Feudal people in all its phases. Now rightly to idealize is a work of the gravest social importance. Many things have been said in comparing and contrasting the work done by Art and Science in the world. But this at least may be said of Art, that it is the most powerful lever for raising the great mass of mankind outside and above their own immediate interests. The vast majority of men will neither be philosophers nor students of philosophy. But we may hope for the time when they will be so far artists that all the higher forms of Art shall be received by them with enthusiasm.

And among forms of Art the drama is surely one of the highest. See what it does. It makes the mass of men speculate, whether they will or no, on the highest objects of speculation, human nature, human character, human life. If you think for a moment of a gathering of men and women in a theatre listening to a masterpiece of Shakespeare, Molière, or Calderon, and compare it with one of the miscellaneous gatherings at the British Association listening to the last new discovery as to the

history of the world before man came into it, you will see that this latter assemblage has really no sort of title to take precedence over the former. Between a people educated by School Boards and a people educated by a national drama, it is not the School Board folk that seem to be in the happier case. The people in the theatre are thinking, unconsciously perhaps, but still thinking, about very difficult problems, and problems well worth the solving. And when to the intellectual stimulus implied in following a dramatic masterpiece you add the collective sympathies called out, the feelings that all of us there together, rich or poor, high or low, share in common, the touches of nature that make the whole world kin; and when you add, yet further, those deeper thoughts that reach conscience, and strike down to the depths of passion, *purifying* it, to use Aristotle's marvellously profound word,* by stripping its veils away and revealing man to himself as he really is,—we shall come to think perhaps that, of all functions of social life, that of such dramatists as Æschylus, Shakespeare, and Calderon, is among the very highest.

Such an institution as the Spanish drama was not built in a day. Calderon is its greatest representative, the noblest of a long line, as Shakespeare of the English drama or Æschylus of the Greek. In the month appropriated in Comte's Historical Calendar to Shakespeare, there are the names of eight Spanish dramatists, six in the week of Calderon, two in the weeks following: Lope de Vega, Guillen de Castro, Guevara, Montalvan, Moreto, Rojas, Tirso de Molina, Alarcon. Now, Lope de Vega

* "Ἔστιν οὖν τραγῳδία μίμησις πράξεως σπουδαίας καὶ τελείας, . . . δι' ἑλέου καὶ φόβου περαινουσα τὴν τῶν τοιούτων παθημάτων κάθαρσιν.
Arist. Poet. cap. vi.

was born in 1562; Calderon died in 1681. The lives of all the rest fall within these dates. The work of the whole was therefore contained in less than a century—a century to which the history of literature can hardly produce a parallel; for I have not yet named Cervantes, whose death was almost in the same week as Shakespeare's.

It was about 1580 that the strolling companies, which abounded in Spain as elsewhere, were permanently fixed in two courtyards in Madrid, still the sites of the two principal theatres. There is this remarkable character distinguishing the foundation of the Spanish drama from the English or any other. From the very first, and throughout, it was subject to religious control. The two brotherhoods, named of the Sacred Passion and of Solitude, were appointed by the Government to take charge of it. The restrictions imposed by them at one time threatened to become intolerably oppressive. Under Charles V., all drama that was not strictly theological was suppressed; and Philip II. made more than one attempt to do the same thing. In the very last year of his long, sour life, he forbade every form of theatrical representation. The national feeling was, in the end, too strong for him. Nevertheless, no one can doubt that the sort of censorship thus exercised, due as it was partly to the jealous fear of the invasion of Protestant ideas, had very much to do with the purity of language and of thought which distinguishes the Spanish stage. One of its most striking contrasts with the English contemporary drama, whether of Elizabeth or Charles II., is the almost entire absence of coarse language, or of appeals, subtle or brutish, to sensual feeling. Shakespeare, as we know, stands far above his fellows in these things as in others. But many passages that Shakespeare tolerated would not have been tolerated

in Spain. It was not that human passion was excluded. There was no cold classicism turning flesh and blood into marble antiques. In all the countless masterpieces of the Spanish drama, the men are men and the women are women ; and the passions of love, jealousy and revenge—to say nothing of the brighter and merrier sides of life—are painted with an energy and vividness unsurpassed in the whole history of art. But in the vast range of the Calderonian drama there is no word at which a woman could blush. The connection of the Stage with the Church counts for much in this ; and it was a very close connection. Lope de Vega, the true founder of the Spanish drama, was first a soldier and afterwards a priest : Calderon was also a soldier, and was also for thirty years a priest. Cervantes was a soldier, as all his readers know ; he fought at Lepanto, as Lope de Vega fought in the Spanish Armada ; and Cervantes, towards the end of his stormy life, entered a religious brotherhood. Montalvan was a doctor of divinity. Tirso de Molina, the first author of *Don Juan*, lived and died in a monastery. Moreto also took orders. All this meant, of course, something widely different from what it would mean now. The Catholic priest of our own time is set to his work very young ; he has been brought up in theological colleges, in strict seclusion from the world. He is kept carefully aloof, so far as the Government will allow, from the public schools of his country. When all the lads of his own village do their duty as soldiers he is not allowed to join them. And brought up in this exotic atmosphere, ignorant of human life in all its phases, joining neither in the intellectual or social progress of his time, he is not likely to do much for the spiritual government of man. But the Church of Spain, in the sixteenth and seventeenth centuries, was co-extensive with

the whole life of the nation. And while we bear in mind that certain currents of social progress were rigidly and savagely resisted, that a Descartes, a Bacon, an Isaac Newton, a Locke, a Hume, were impossible in Spain ; that science, philosophy, modern industry, were arrested in their very germs, waiting for later centuries to ripen them, we may yet fairly and frankly own that it has been well that one nation of the European brotherhood should show by example what the old feudal Catholic order was without these things. For Spaniards can say, We have invented no steam engines, and built no factories ; but we are less divided by the war of classes than any other nation ; and we stood up against the tyranny of Napoleon as our fathers stood against the Moors. The life of our nation has been a noble life, and great poets have found it worth their painting.

The greatest of these poets, if for the moment we except Cervantes, was Calderon. Others were great ; and to others the structure and constitution of the Spanish drama is due : to Lope de Vega especially, the most astonishingly facile and fertile genius, perhaps, in the long list of the world's poets. Calderon entered into no field of art that others had not cultivated before ; his metres are the same, the structure of his plays is the same, his choice of subjects the same. But he did their work better. He put wider and deeper thought into it.

His work, as I have said, was the portraiture of the manners and the passions of a Catholic and Feudal people. Loyalty, Honour, Love, Jealousy, Revenge,—the conflict of all these complex passions offered an inexhaustible treasure-house of themes. The restraints imposed by the Church were assuredly light enough. Impurity and heresy being banished, these poets were free as the winds. The

tone was feudal and Catholic: Christian, in the narrower sense of the word, it was not; as little as it was pagan. Half Calderon's plays turn on fine points of honour, and on the conflicts of honour with love or with loyalty; and the feeling of honour is neither Christian nor pagan: it is mediæval and feudal. Honour is an alliance of the higher egoistic instincts with the social instincts against the baser passions of fear, lust, or avarice; this alliance always presupposing a special state of outside opinion to which it is adjusted. The feeling of comradeship must be strong; the sensibility to praise or blame must be very keen; and pride, as distinct from vanity, must be strong too; there is resolution not to submit to force of any kind. Given a social environment corresponding to this combination of feelings, and you have the remarkable phase of feeling unknown in Europe before the Middle Ages, though paralleled perhaps till lately in Japan, called the sense of honour; and it remains, and will always remain, a stronger guarantee for truthful dealing between man and man than any which has been created by theology. No such machinery for crushing the baser power of egoism has ever been invented. To be too proud to tell a lie, to suffer death rather than disgrace—feelings of this kind lie at the root of all noble character. Their germs may be traced everywhere, but it was mediæval life that first brought them into prominence; and of the two elements of mediæval life it was the Feudal rather than the Catholic element from which they sprang. In Oriental Christendom, where the feudal element was absent, you find few traces of all this. In Spain the feeling was stronger than elsewhere; and it led sometimes to strange aberrations, which Calderon, in such dramas as *The Painter of his own Dishonour*, was not slow to indicate. Be this as it may, the antagonism of

honour with love and loyalty, in combinations of circumstances which Calderon surpassed all other poets in contriving, gave the Spanish poet such opportunities for bringing into prominence the grandest elements of our moral nature, as Greek sculptors had for portraying the physical form of man in the contests of their wrestlers.

An even stronger contrast between ancient and modern poetry is the part which women hold in it. One or two beautiful types apart, like the Penelope of Homer or the Antigone of Sophocles, the women of Greek poetry are either slaves, like Briseis, whose ownership stirs quarrel, or pernicious phantoms like Helen, or revengeful demons like Clytemnestra and Medea. Such portraits of women as Shakespeare and Scott have given us are of modern creation, for the originals themselves are modern. In the dignity and noble charm of his women Calderon seems to me sometimes supreme amongst poets. I do not maintain, of course, that in delineating the subtle idiosyncrasies of character either in man or woman he is to be mentioned in the same phrase as Shakespeare. Shakespeare came into the world to teach this one truth above others, a truth of the profoundest social import, and which needed telling—that every man and woman born into the world differs from every other man and woman. And portraiture of individualities of character have been the strong point of English art ever since. Calderon's powers did not lie in painting individualities of character. His men and women are the men and women of Titian or Vandyke, rather than those of Holbein or Reynolds. Nevertheless, I think that women, broadly speaking, play a more important part in Calderon's drama than in Shakespeare's. They have more responsible work to do; and some of them reach heights and depths which Shakespeare never measured. I will

give as an instance Calderon's Mariamne, the victim of Herod's atrocious jealousy. There is a vague prophecy which haunts the drama like a dim phantom that she is to die by his hand. Herod is passionately in love, and his love stirs him to attempt the conquest of the world that he may make her its empress. Nevertheless, he is possessed by frantic jealousy, lest, he dying the first, she should be possessed by another ; and knowing that his own life is in danger from Octavius, against whom he had fought, and whom he knew to have expressed great admiration for his wife's beauty, after having seen her picture, he descends to the infamy of attempting her life. Mariamne gets knowledge of the plot. She begs her husband's life from Octavius. Then, with very noble and calm indignation—beneath which her outraged love lies buried—she tells her husband that she will never see him again. Octavius, wishing to protect her from Herod's frantic rage, secretly obtains access to her, and urges her to flight. But, with quiet dignity, she tells him she needs no protection :—

My lips were dumb when first I saw you here ;
 And now I hear you speak my breath comes back
 Plainly to tell you this : Some perjured traitor
 It must be who has dared to fill your mind
 With this abhorred proposal. Sir, my husband
 Is my husband ; and say he were to kill me
 I am guiltless,—which in the flight you talk of
 I could not be. I dwell in safety here,
 And you are ill-informed about my grief ;
 And though you were not, and the dagger's point
 Should hush my life, I die not through my fault,
 But through the fatal influence of my star ;
 And to die spotless is a lighter thing
 Than to live pointed at by common scorn.
 If therefore you intend me any kindness,
 You cannot do a greater than to leave me.*

* The translation of this extract is based on Ticknor's, as given in his *History of Spanish Literature* ; but it is rather closer to the original.

It is too late. Octavius and Herod meet in the dusk, and Herod's fatal dagger—meant for his enemy—falls on Mariamne. I think that any one who reads this play carefully will say that Mariamne is greater than Desdemona ; her equal in purity ; her superior in womanly dignity.

Take again the Justina of *The Sorcerer* (*El magico prodigioso*). This play has, superficially enough, been compared with Goethe's *Faust*. But what woman in *Faust*, whether in the first part or the second,—what woman in any poem of Goethe, is to be compared to Justina ? Cyprian of Antioch, like Faust, has sold his soul to the Demon ; he claims from the Demon that he shall win Justina, a young Christian of that city. Then the Demon tempts Justina, not with necklaces and earrings, like Mephistopheles, but with the subtlest and most delicate influences of art and nature that from the air all round her breathe ethereal love. This may be read in Shelley's exquisite fragment of translation, too long to quote here, and too beautiful to mutilate ; as also the passage where Justina resists the Tempter :—

JUSTINA.

So shall thy promise fail. This agony
Of passion which afflicts my heart and soul
May sweep imagination in its storm.
The will is firm.

DÆMON.

Already half is done
In the imagination of an act :
The sin incurred,—the pleasure then remains.
Let not the will stop half way on the road.

JUSTINA.

I will not be discouraged, nor despair,
Although I thought it : and although 'tis true
That thought is but a prelude to the deed ;—
Thought is not in my power, but action is.
I will not move my foot to follow thee.

Feudal life in all its phases is the staple material of the Calderonian drama. But, as I have said, feudal life in Spain was not accompanied by the war of caste and class that embittered it elsewhere. The homelier side of Spanish life has a dignity all its own, as readers of Cervantes know. And perhaps in the whole range of European literature no more genuinely republican poem is to be found than Calderon's *Mayor of Zalamea*, where the poor village magistrate carries out the utmost penalties of the law on the king's officer, and with grave decorum upholds the righteousness of his action before the king himself.

One short quotation gives the key-note to the whole. The General, Don Lope, is remonstrating with Farmer Pedro for what he thinks disrespectful treatment of the officer who had been billeted upon him, and who had already shown insolent attention to his daughter.

General. By God, sir, do you know he is a Captain?

Pedro. By God, sir, I do: and, though he were a General, I would kill him if he touched my reputation.

General. If a man here touches one hair of the poorest soldier in my army, as sure as there's a God in heaven, I'll send him to the gallows.

Pedro. And as sure as there's a God in heaven, if any one here makes free with one jot or one tittle of my honour, I'll send him to the gallows too.*

General. Don't you know that you, in your station of life, are bound to bear this charge?

Pedro. Bound for my money's worth, yes: for my good name, no. My fortune and my life are the king's; my honour belongs to my own soul; and my soul belongs to God.

On many sides of Calderon's work I have left myself no space to dwell. The *April and May Mornings*, gay, delicate, and rich as a picture by Watteau; *Life's a Dream*,

* The point of the story is that Pedro was as good as his word.

the profoundest and most original of his dramas, the humorous bravery, wild adventure, and lurid passion of countless others, must be unnoticed here. I pass to that part of his life's work on which he himself set most store: his religious drama. In the full maturity of his powers, after full experience of the world as a soldier, a diplomatist, and a courtier, after delighting it with his brilliant pictures and profound studies of the passions and struggles of life, he became a priest. The thirty remaining years of his life were spent mainly, and yet not entirely, in the composition of poems called *Autos Sacramentales*: in other words, public acts in honour of the Sacrament. They were, in fact, mystery-plays, like those that were performed in every country through the Middle Ages, and of which the Ammergau play is a survival. These *autos* were performed at the festival of Corpus Christi, in Madrid, in Toledo, and in Seville, and indeed throughout Spain. Calderon was not the first poet who wrote such plays: for Lope de Vega, and many others, had done the same thing. But by the energy which he concentrated on the subject, by the infinite variety which he gave to a few very simple themes, by the wealth of thought and imagination which he poured into it, Calderon has made this great branch of art his own. It was in no pietistic or morbid mood, but in deliberate judgment, that he judged this part of his work far more important than the rest. It was not merely because he became a priest that he exchanged secular for religious drama. He wrote several religious dramas before he became a priest; he wrote some secular plays afterwards, one in the last year of his life. But for the last third of his life, that is, say, for thirty years, he devoted himself mainly to the great work of clothing the religious beliefs of his countrymen in a poetic form.

For his secular plays he cared so little that it was with some difficulty that he was persuaded towards the end of his life to draw up a list of them ; but some of the Sacramental Acts he was at the pains of editing, and altogether he wrote one hundred, of which seventy-two have been preserved.

The religious drama of Calderon falls under two heads ; his Plays of Saints, and his Sacramental Acts. The first were written on the same plan as ordinary plays : they were in three Acts ; the characters were living men and women ; the supernatural machinery is hardly more prominent than in Shakespeare's *Macbeth* or *Hamlet*. The *Purgatory of Saint Patrick*, the *Devotion of the Cross*, and *The Sorcerer*, from which I have already quoted, are examples.

But the Sacramental Acts stand entirely apart from this. The occasion, the subject, the place, the audience, the style, the mode of construction, were all different from those of other dramas. The occasion was the festival of Corpus Christi ; the uniform theme was the dogma of Transubstantiation ; the place the public square of the city ; the audience was the whole population of that city, from king to beggar. There were religious functions in the churches ; there were processions of priests and people through the streets, the king carrying his lighted taper like any other layman ; there was kneeling of the vast multitude in the street, as prayer alternated with song ; and, midway in the ceremonial, all gathered before the stage erected in the market place, and the play began. The plays were in one act, preceded by a prelude. The personages were, for the most part, allegorical beings, like those of Bunyan's *Pilgrim*, or of his *Town of Mansoul*.*

* Calderon's *Philothea* has a remarkable resemblance to the *Town of Mansoul*. It has been translated by Mr. D. F. MacCarthy.

The titles of these wonderful works show the infinite play of fancy which could present one and the same theme in so marvellous a variety of forms. *The Merchant-Ship, The Brazen Serpent, Belshazzar's Feast, Psyche and Cupid, The Divine Orpheus, The True God Pan, Sacred Parnassus, The Sorceries of Sin, To God through Policy, No better Luck than God, The World's a Stage, The Dumb Devil, The World's Market, Gideon's Fleece*—these, and other the like titles, prepare us for what we are to find. As for the characters, Bunyan himself is far outstripped by their variety. The Christian virtues, the seven deadly sins, the five senses, Judaism, Paganism,* Mahommedanism, Atheism, the Saints, the Sibyls, the heroes of the Old Testament or of Greek or Roman story; Earth, Air, Fire, and Water; the trees of the forest, the seven days of Creation, the Sacraments, the orders of Chivalry, Human Nature, Intellect, Free-will, demons of every sort, and the Creator Himself;—all these, and more, are called on the stage. The appeal is not to pity and terror only, or to religious awe. There is much wholesome scorn and genial mockery. Not one of these sacred plays but has its fool. Atheism in one play, Free-will in another, Gluttony in a third, gave infinite amusement to the audience. On the mechanism of the stage great pains were lavished. Vast cars of boat-like shape, suspended in the air, were swung round to the front, containing the personages of each successive scene. The decoration was magnificent and costly.

A short account of one of these plays will serve as an example to the rest.

* It is noteworthy that Paganism is invariably treated by Calderon with much more respect than Judaism; a true, though instinctive, appreciation of the preponderating importance of the Græco-Roman element in modern life.

In the *Divine Orpheus* a black pirate ship appears on the gloomy waters of Chaos and of Night ; the captain is the Prince of Darkness, and Envy is with him. A sweet voice heard in the distance makes them shudder. Then, through the dim light, a vast globe shows itself, and, opening into two hemispheres, discovers Orpheus. He invokes Chaos, and, as he sings, a third car appears, in which are seen sleeping the Seven Days of Creation. One after another, each is bidden to awake. Let there be light, the Master sings, and the first Day rises with his torch and passes on. The second divides the sea and sky ; the third brings fruit and flowers ; the fourth the sun and moon ; the fifth arises, and fish swim in the sea, and birds fly through the air ; the sixth is awakened by the magic singing, and beasts break forth from the rock ; and, last of all, Human Nature herself, represented as a beautiful woman, wakes from sleep, and the message of dominion, and free will, and obedience, is delivered to her. The demon has seen and heard this ; but admiring while he hates he is goaded by envious fury, and resolves on her ruin. He bids the pilot of the River of Oblivion to make ready his bark to carry her into eternal night. But Human Nature again appearing, accompanied by Pleasure, the wit and buffoon of the piece, and by the Seven Days, begins to chant the praises of the Creator in the words of the hundred and thirty-sixth psalm ; the chorus of the Days joining in with the refrain, *For His mercy endureth for ever*. Now begins a scene of most courteous gallantry between Orpheus and Human Nature, in which the lover wins his bride and leads her into his palace. The Demon, disguised as a gardener, presents himself to the Lady, and persuades her to taste the forbidden fruit. Instantly the days, one by one, flee

from her, each followed by the black shadowy form of Night; and Human Nature, now called Eurydice, is carried by the Demon across the black water.

Orpheus returns, bearing a lyre fashioned like a cross, and, breaking forth into musical lamentations; the chorus of the Days following him. He conjures the pilot Letheus, who defies him, but who in the act of striking him falls dead. The two disappear in darkness, and an earthquake follows. The scene changes, and Orpheus reappears on the black ship, the mainmast of which is now fashioned like a cross. Orpheus claims his bride from the Demon. The chorus of Days surround her, and lift her to the Ship of Life—the symbol of the Church—which now sails forward, gay with streamers, and carrying at her top a lantern, in which is placed the Chalice and the Host. "What avails it," says the Prince of Darkness, "that you take her from me? for, whenever your face is turned away, she will come back to my prison." "I accept the challenge," Orpheus replies, "for in the Ship of Life are Sacraments to guard her from that danger." "What Sacraments are these!" ask Envy and the Demon from the deck of their Black ship. "Seven," says one of the Days from the other ship, "and the holiest of all is that which this lantern shows: the body and blood of Christ in bread and wine." Then actors and spectators sink on their knees, and with triumphant chorus, broken only by the moans of the Demon, bid god-speed to the Ship of the Church.

Such was Calderon: his life being of all great artists almost the completest that I know. It was lived out to the full in health and full activity. No base passion choked it, no harsh circumstance hampered its free growth. Soldier, diplomatist, courtier, and priest, the favourite of his king, the beloved of his nation—whose pride and

sorrows he shared to the full—his experience of life was richer than Dante's or Milton's, for he could laugh as well as weep; richer than Goethe's, for he knew what religion was, and Goethe did not. His culture was the high culture of the Renaissance, well stored in such philosophy as Aristotle and Aquinas taught; eagerly receptive of every phase of æsthetic or natural beauty. He loved music; he lived with great painters as well as great poets, and he wrote a treatise on their art. And, finally, sparing of all detail though his biographer has been, he has told us these two simple things worth many volumes of impertinent minuteness; the house of Calderon was the refuge for every one in distress, and he never made an enemy, or said a bitter word of any one.

Of all great poets he is among those few who have well understood and completely fulfilled the social function of the poet. That function is to idealize the life of his nation in all its phases, standing halfway between abstract principle and realized result, and bridging over the gulf between them. Homer did this for the world. Dante, impeded by hard circumstance, and uttering dark oracles for the few rather than the many, did this for mediæval Europe. Calderon, happier in his narrower sphere, did this for Spain. And it is in Calderon that we see the latent capacity for poetic development that lay within Catholic and feudal society, had only the fatal imperfections of the Catholic doctrine permitted, and could we forget that behind the splendid pageant of the *Autos Sacramentales* loomed the lurid smoke-clouds of the *Autos da Fe*.

The history of great poets and of their times teaches us something of the conditions which allow great poets to arise. It may be that our own time is not one of those in which the greatest minds will easily accept this form

of spiritual activity. An age in which every doctrine is disputed and none accepted, an age of chronic warfare between rulers and ruled, between rich and poor—in which the very sexes are being goaded, however vainly, into ignoble rivalry—is not the age of great poets. Our business is the harder and duller work of establishing firm principles, of laying foundations of solid convictions on which the future fabric of human life may rest. Yet it is some solace amidst the confusion and disarray of modern life to look forward to the after-time when a faith that unites men and nations, instead of dividing them, shall be embodied in song and colour and carved stones, and stir the hearts of men, as no written words can do, to noble impulse and action.

Dante admitted with much hard straining here and there one Pagan into Paradise, or remitted for others the fiercer pains of Hell. Calderon, using a poet's licence to break the limits of the Church's rules, handled the beliefs of our Greek and Roman ancestors with kind indulgence. But to us the whole life of Humanity is one, and is sacred, from her earliest childhood to her remotest future: for us her days are "bound each to each with mutual piety": for us the faiths, Pagan, Christian, or Mussulman, which have hurled nations into deadly conflict, even whilst they knit their ranks together, are but varying and imperfect forms of one and the same religion which shall one day unite the world. And thus the treasure-house of future poets and artists is boundless, for it is nothing less than the history of Humanity.*

* The seven plays of Calderon, selected by Auguste Comte in his volume of *Spanish Plays* (Paris, 1854) are as follows: *Two Stabs in the Dark*, *The Mayor of Zalamed*, *Life's a Dream*, *Not Always so Bad as we Think*, *April and May Mornings*, *The Merchant Ship*, *The Lord's Vineyard*.

III

CENTENARIES OF CORNEILLE AND DIDEROT.*

WHEN we are told—as we often are told—of the cramping, narrowing, repressive tone of Auguste Comte's teaching, that he could only conceive one type of excellence into which all the world was to be thrust, and that to co-operate with those who are trying to carry out his work is to fasten on again the chains which, after many years of pain and struggle, have at last been broken, it would seem enough in answer to these and the like objections to point to the Positivist Calendar. I suppose that never before were five hundred names collected so widely different in parentage, in time and place, in the nature and quality of their work, yet all convergent to a purpose. There have been biographical dictionaries without number; and there have also been collections of Lives of Saints. But the dictionaries admit good and bad alike; their business is to exclude no name that has stamped itself for good or evil on the world's history. Borgia is there with Raphael, Augustine with Attila, Shakespeare with Philip II., Goethe and Byron with the first Napoleon. And, on the other hand, the Lives of the Saints are restricted to one type of excellence—or, at any rate, to the followers and upholders of one special creed.

But the Positivist Calendar is distinct from these, both

* October 26, 1884.

in what it admits and in what it rejects. It rejects all mere destroyers ; it excludes also all those who have set themselves to turn the tide of progress backwards. Attila, Alaric, Genghis Khan, find no place. The statesmen of Protestantism are admitted, but not the founders of Protestant sects. Even the leaders of the French Revolution, though it forms the era from which the Calendar is dated, are not there. So, too, Julian the Apostate, Philip II. of Spain, and Napoleon Bonaparte, are shut out. But it collects representative names from all countries and centuries and creeds, whatever the quality and character of their work, who have built up the life of Humanity, with a special reference to the life of Western Europe, from the earliest times of Greece to our own. For it is not pretended that full justice is done to the yet earlier periods in the life of Humanity representing primitive Fetichism, and even primitive Theocracy. It is not maintained that these five hundred names are the names of saints. All that is assumed is that, each in their way, have done good and valuable work that deserves to be thankfully remembered and commemorated.

Another consequence follows from this character of the Calendar. It is almost impossible to associate by mere hazard any two names in it between which some definite link of connection cannot be easily pointed out. This comes, of course, from the fact that all the true functions of Humanity are necessary, and are correlative and interdependent : just as in the life of the individual, seeing, and feeling, and motion, and nutrition are all closely connected together, so that disturbance or paralysis of one disturbs and weakens the other. So with the social organism—Poetry, Philosophy, Science, Statesmanship, act and react on one another.

The two men whose services we are to commemorate to-night lived in different centuries, and had very different work to do. Nevertheless, it will not be difficult to show that their work tended towards the same purpose.

Peter Corneille was born at the beginning of the seventeenth century, in 1606, and died two hundred years ago, in 1684. During his childhood, Shakespeare and the greatest genius of Spain, the author of *Don Quixote*, were still living. Lope de Vega was in full force, and survived till Corneille's manhood. Milton and Calderon were, as nearly as possible, his contemporaries. Milton was two years younger than Corneille, and died two years before him. Calderon was five years older; we celebrated the bi-centenary of his death two years ago. Molière's short life of forty-nine years was included in Corneille's; his death was in the year before Milton's. Racine was in full vigour when Corneille died, and survived him for fifteen years.

Here, then, we have a list of eight poets, all of very high eminence. Other names might have been added, from Spain and from England especially. But these suffice. Few centuries have seen such an outburst of poetic art of the grandest and largest style. Can we in any way account for this, or render to ourselves any account of the value of this work?

Early in the sixteenth century the decay of the Catholic organization, which had been going on for two centuries, led to the open conflagration that goes by the name of the Protestant Reformation. Between the nations that accepted the Reformation as a refuge from intolerable evils, and those that rejected it as a remedy utterly inadequate to the disease, and bringing worse evils after it, inevitable struggles ensued; and into the struggle entered all the

personal cupidities of rival statesmen, no longer restrained, as they had been during the Middle Ages, by the counsels of a spiritual power universally recognized. The strife was not finally ended till the great treaty of Westphalia, in 1648, by which the nations of Western Europe formally recognized that Europe was to become neither Catholic nor Protestant—just as by the cessation of the Crusades, some centuries before, it had been practically recognized that neither the Christian nor Mussulman faith was to be the universal religion. In France, where the struggle during the sixteenth century had been singularly fierce, the reconciliation had been effected already for some time by the accession of Henry IV. and the edict of Nantes, which allowed freedom of worship to Catholic and Protestant alike.

Thus, in the century following that of the Reformation, there was a time of comparative repose after violent strain and conflict. Such times have always been favourable to an outburst of poetic energy. Vigorous natures deeply stirred by conflict have no other outlet for their energy than that which poetic idealization offers. Thus in Greece after the Persian struggle, in Rome after the long civil wars of the republic were ended by Augustus, and in our century at the close of the war with France, there have been times of great poetic fertility. The noblest passions of our nature have been called out in the struggle, and the poet has idealized those passions as the Greek sculptor idealized the splendid forms that contended before him in the arena.

Such a period was the seventeenth century. It was a breathing-time between the two great struggles of the Reformation and the Revolution. The struggle was far from over; it was yet to assume dimensions that Luther and Calvin had never dreamed of. But, meantime, there was rest; it was possible to think of the problem which

always remains constant amidst whatever conflicts and changes the future may bring—the idealization of life.

Into such a time Peter Corneille was born. He was a Norman, son of a Commissioner of Forests, belonging therefore to that upper middle class which has produced so many great Frenchmen. Like Descartes, like Diderot, D'Alembert, and so many others, he was brought up by the Jesuits, of whom he never ceased to speak with gratitude. His life and character are notable for their extreme simplicity. He was utterly free from ambition, cupidity, or intrigue, with a certain grave, Stoic ruggedness of character, inspiring respect in all round him. His life lay in his work. There are few incidents in it that are worth recording. His four noblest tragedies were written in early manhood, between 1636 and 1640. In those that followed there are noble scenes, but no complete work which we can admire. The other work of his which has come down to us is the poetic version of the *Imitation of Thomas à Kempis*, which, together with the original, finds a place in the Positivist Library.

A few words on these four principal dramas. These are *The Cid*, *Horace*, *Cinna*, *Polyeucte*. The interest of all these dramas turns on the conflict between opposing duties and affections. He has not dealt as Cervantes and Shakespeare did with the animal or the vicious propensities which intertwine themselves with the higher emotions, and bring about the parti-coloured result which is seen in real life. Vice and treachery find no place in Corneille's drama. He spent his strength in one problem, quite large enough for any one man to handle—the conflict of public and private duty, the opposing strain of two passions, either of them pure and noble, but pulling in contrary ways.

In the *Cid*, the scene of which is laid in Spain of the

eleventh century, Rodrigo's father, Diego, an old man, has been insulted by the father of the woman to whom he is betrothed. Rodrigo is urged by Diego to avenge the insult. After a violent conflict between his love for his betrothed and his sense of wounded honour and filial duty, he complies, and Chimene's father is killed in the duel. Chimene's love for Rodrigo, which is great, is brought into conflict with the passionate respect for her father, urging her to demand vengeance on his slayer. On the conflict of these emotions turns the interest of the drama, for the two passions do not destroy one another; they work simultaneously. Chimene loves ardently, and continues to love the man she desires to punish. The strange paradox of revenge and wounded honour contending with love, each retaining its full force in the desperate encounter, is ended at last by an overwhelming public danger. The Moors invade Spain. Rodrigo is the only man in whom his countrymen can trust. He leads them to battle and victory. And the king at last satisfies the heroine that the baptism of battle has wiped away the deadly wrong that severed her from her lover.

The drama of *Horace* carries us back to the early days of Rome, when the little city of Alba, a few miles away, was her deadly rival. It was agreed that the strife between them should be decided by a combat of three champions on either side. Horace, with two brothers, was the Roman champion. Curiatius and his two brothers were to fight for Alba. Private passion intertwined itself with the struggle. Horace was married to an Alban wife. His sister, Camilla, was betrothed to the Alban champion. The story follows the old legend as we may read it in Livy. The two brothers of Horatius are slain in the combat. But all three of the Alban champions are more

or less severely wounded. Horatius, feigning flight, is pursued by them; and when they have been separated, turns round, fights with each separately, and is victorious. Entering Rome in triumph, he is goaded by the violent reproaches of his sister into a paroxysm of indignation, in which he kills her. He is judged by the king for so terrible a deed, but, having saved his city from servitude, he receives pardon.

This old familiar theme was well suited to Corneille's genius. The conflict of private and public duty receives five distinct modulations. The father of the Horatii is eager for his sons to be the champions of their city, but tenderly compassionate for his daughter betrothed to their foe. Horatius himself is the perfect type of the Roman citizen, wholly absorbed in his patriotic duty. His wife, Sabrisa, though Alban, and tenderly attached to her brothers, is yet the true Roman wife, unflinchingly faithful to the country of her adoption, though in no way hardened against natural affection. Curiatius, the Alban chief, is of another mould from Horatius—far less firmly knit together. In him private passion contends with far more hope of mastery against public duty; and, finally, in his mistress, Camilla, the vehemence of love sweeps patriotism utterly away.

The play has five acts. The story is simple, trite, and even hackneyed. There is an absolute and entire absence of local colour. Such elaborate scenery and costumes as we are now in the habit of requiring from those who represent Shakespearean drama would be utterly out of place. The characters might belong to any period of Roman history, and they talk like civilized Europeans. Moreover, the drama is wholly unrelieved by the play of realistic humour and the tones of common, everyday life,

of which Shakespeare and the Spanish dramatists made such abundant use. And, nevertheless, it is a noble poem. The sympathies are so deeply and sublimely stirred, the balance of emotions so carefully maintained, the suspense of the battle is portrayed with such skill and such glowing feeling, that it can be read year after year with renewed admiration—at least by those who are not so distracted by the morbid individualism of much modern poetry that all generous public emotions have become distasteful to them.

In the drama of *Cinna*, Corneille has given a finished portrait of a very complex and remarkable character—Augustus. Repentant of the sanguinary struggles of his earlier life, and resolute to restore peace to the Roman world, he is beset on every side by bitter enemies, bound to vengeance by the deepest blood-feuds. Emilia, daughter of one of the aristocratic, so-called republicans from which the popular dictatorship of the Cæsars had saved the Roman world, was one of these enemies. Her father had been put to death in the civil wars. She urged her lover, Cinna, a man in whom Augustus had placed great confidence, to form a conspiracy against him. It was betrayed by one of the conspirators. Augustus, instead of punishing the two framers of the plot, heaps coals of fire on their head, and vanquishes them by complete forgiveness.

Polyeucte, the last play of which I shall speak, is perhaps, on the whole, the greatest work of Corneille. The scene is laid in Armenia, during the reign of the Emperor Decius, one of the emperors who made the most strenuous efforts to suppress Christianity. Polyeucte, an Armenian noble, has married Paulina, the daughter of the Roman governor, Felix. Paulina, before her marriage, had ardently loved Severus, a Roman officer, who had distinguished himself in battle by saving the life of the emperor, sacrificing,

as it was believed, his own. He is not dead, however, but merely taken prisoner by the enemy. Released at last from captivity, he returns to claim Paulina's love, but finds her married to a rival. Paulina's interview with him is extremely noble, pure, and touching. She is honour and loyalty itself: faithful without prudery, dignified without hardness. She is a believer in the old religion. She now learns with dismay that her husband has openly declared himself a Christian, and has audaciously defied the worshippers of the old gods in the principal temple of the city. Her father, the governor of the province, a self-seeking man of the world, is for the strictest punishment. He owns to his confidant that if Polyeucte were out of the way, and Paulina were free to marry her first lover, he should feel more secure of the emperor's favour. Paulina tries all her power upon her husband, whose stringent Christian orthodoxy, bent on eternal happiness in another world, does not, it must be owned, contrast very favourably with the noble, unselfish devotion of his pagan wife, or with the generosity of his rival, Severus, who unite their efforts to save him. He undergoes martyrdom, however. And from love and desperation with life, more than from conviction, his wife at last declares herself a Christian.

In this drama the principal interest is certainly concentrated on the heroine, one of the purest, most tender, and most loyal types in all poetry. It is very remarkable that Corneille, orthodox Christian as he undoubtedly was, should in this, and, indeed, throughout the whole series of his dramas, have made Humanity predominate so entirely over divine interests. The simple truth is that, in the noble form of art to which Corneille devoted himself, the idealization of public life in harmony and in conflict with private passion, the pure Christian absorbed in future blessedness

was of necessity relegated to a subordinate place. The drama supposes action and passion between suffering and striving men and women, aiming at different goals. These may be noble for each one, and yet, being diverse, may involve fatal conflict, of which either side may call out our strongest sympathy. But those who, withdrawing from the common lot, look upon this world as a pilgrimage, for which it is hardly worth while to take much care or thought, can hardly interest us so much as those who share to the full earth's joys and sorrows.

When Corneille felt that his genius had lost its elasticity and freshness, he withdrew into dignified retirement. His translation into French verse of the *Imitatio Christi* of A Kempis, which occupied his later life, has a place in our library. That book has been the consolation of many to whom the special dogmas of the writer had lost their meaning. It formed, with the *Vision of Dante*, almost the sole reading of Comte in his later years. But the special contribution of Corneille to the treasure of Humanity is his noble application of art to public life. The elevation of tone, the capacity for the noblest civic feeling, the generous ardour that, in the best times of France, have distinguished her citizens, are largely traceable to the influence of this great and good man.

Corneille was buried in the Church of St. Roch, in the Rue St. Honoré. A hundred years afterwards, that is to say, a hundred years ago, there came the burial in that same church of a man of widely different life, character, and work, the man whom the world is slowly coming to regard as the representative genius of the eighteenth century—Denis Diderot.

Before we speak of him we are led in the first place to ask, What is the link between the seventeenth century

and the eighteenth? How did the first prepare the way for the second? What is their filiation?

I spoke of the seventeenth century as an apparent time of rest—a halting-time. And so it was, in France through the whole period, in England through the latter half. Nevertheless, there was a progressive movement going on, and one of vast importance, though limited to a mere handful of human beings. Let us always remember that Progress is not a magical metaphysical entity, always going on in every generation everywhere alike. There is such a thing as Regress, Decay, Degeneration, a long steady process of Decline, ending in Death. It cannot possibly be maintained, if you confine your view to a single country, through many centuries, that that country can in every case be said to have made progress. The melancholy truth forces itself upon us that exactly the opposite has been the case. Can it be said that Greece in the present day shows a steady progress through the twenty-three centuries that have passed since the time of *Æschylus* and *Pericles*? Has there been steady progress in Spain since her glorious struggle with the Moors, or in Italy since the time of the Lombard Republics, and of *Giotto* and *Dante*? We must not live in a fool's paradise, and suppose that progress is a force like the force of gravitation, on which we can always count; or that the great mass of mankind everywhere always partake in it. Quite the contrary is the case: and it is well we should keep it constantly in mind that each generation is in constant danger of degeneration and decay: from which nothing but the strenuous effort of all good men and women living therein can save it. And as a matter of fact, the progressive movement of this life of Humanity has very often been limited to a single nation, and more

than this, to a very small group of men in that nation: sometimes perhaps to a single mind. Progress is a process as wholly independent of universal suffrage as the growth of an oak tree is of the sparrows that twitter about its branches. Mere counting of heads has nothing to do with it—it is neither democratic nor aristocratic, but sociocratic—it depends on neither Lords nor Commons. The sacred fire is handed on from one generation to another sometimes by a very small group of men, and these not seldom toil up the hill in isolation, silence, and neglect.

It is not too much to say that in the first half of the seventeenth century the progress of Humanity depended in the main upon some half-dozen lives. I am not for a moment ignoring the vast number of true hearts and firm characters who maintained the standard of vigorous and pure life; still less the poets who idealized that life and inspired that healthy delight in it which it is the business of poets to instil: but I speak of Progress as a definite movement towards a definite end. That movement is the transition of Humanity from Theocracy to Sociocracy: from the society governed by priests and kings in the name of God, to society governed by republican chiefs and thinkers in the name of Humanity. Among the few names in the first part of the seventeenth century who carried on this movement, stand in the first rank, Bacon, Galileo, and Descartes. The first led the revolt against the idle expenditure of energy in the study of words and metaphysical abstractions, and turned men's minds to the patient study of nature. The second, acting with Kepler and Tycho Brahe, revolutionized our conception of the universe by showing that the earth was an insignificant part of the solar system, and the solar system an insignificant

fraction of the universe. The life and work of both these men undermined Theocracy at its root. Clear-sighted defenders of the Catholic system knew very well that a blow was being dealt at it compared with which the assaults of Martin Luther were as the brushing of a fly's wing. Since that time every generation has produced an increasing number of thinking men and women to whom the biblical narrative of Creation and Redemption has ceased to be credible. Following close on these men, with whom he was contemporary, though junior, came Descartes. His aim was to extend the conception of natural law to every department of life, and thus to substitute the study of the scientific order of the world for the study of the divine will. In other words, he was the principal precursor of Positivism. He had distinctly before him the aim of reorganization of life. And the first step to such reorganization was that the structure of man's body should be seen to follow the same physical laws as those which governed the movements of the planets. All this was not mere loose and vague talk with him. He did more than any one man has ever done to make his vision a reality. The instrument by which man, without the use of a line, or a foot rule, or a balance, is able to measure a distance, or a weight, or a force; the instrument called mathematics, the science of indirect measurement, was entirely revolutionized by Descartes. He first made it possible by abstract calculation to follow to a large extent the complicated forces of nature: not those alone which move in straight lines or in simple curves like circles or ellipses, but those far more complicated movements which depend on many forces acting continuously in different directions. Thus it became possible to conceive of the time when the vital activities,

those which produce the facts of growth and of movement, should be brought, like the activities of the planets, within the range of calculation, and nothing short of this was the audacious attempt of Descartes. Assuming the two facts of space and motion, he attempted to build up a scheme by which the world, including man's physical structure, might have been evolved. It was an attempt at a scientific cosmogony, an attempt to show how a few very simple mathematical laws would account for the universe.

We now can see very clearly that this stupendous scheme was an Utopia, that the world is far too complex a thing to be accounted for by human calculation,—and that the attempt to do this must be ranked with attempts to make wings and fly, or to find the philosopher's stone, or the Elixir of life. Nevertheless, like all Utopias put forward by great men, it stimulated thought in a very potent way, and in a right direction. The extraordinary movement of mathematical, physical, and biological research which went on from the seventeenth century to our own time was more distinctly initiated and helped forward by Descartes than by any other man. It indicated very clearly to all who could think consistently that demonstration, not revelation, must be the basis on which the framework of society must rest. Descartes did not, it is true, attempt to account for moral facts on mathematical principles. But he brought in here a principle which, though not of such permanent value, was yet equally destructive of the old stage of belief, the principle of examining the consciousness, and rejecting all ideas that were not clearly thinkable. Here he set in motion the whole current of modern metaphysics: which, though it has expended a great amount of intellectual energy

wastefully, has at least proved fatally destructive to the old orthodoxy. When once you were told to believe, on religious and moral subjects, not what your fathers had taught you, not what the Church appointed, but what consciousness revealed to you, that is what appeared clear to your own particular way of thinking, the door was opened to a kind of Protestantism of which Luther and Melancthon had never dreamed.

We need not follow the spread of this intellectual stir from the mind of Descartes to such minds as Hobbes, Spinoza, and Locke. But now, while this ferment was going on in a few leading spirits of Europe, let us see what was going on in the political world. The political movement and the philosophical movement must never be dissociated. It is from the combination of both that great social and moral changes come. Now, the seventeenth century saw the successful close of one great rebellion and the rise and temporary arrest of another. The Dutch Republicans asserted their complete independence of Catholic Spain by the end of the sixteenth century. The English Republic had performed the unparalleled feat of bringing its king before a tribunal and sentencing him to the death of a traitor. That Republic was suppressed, and its adherents fled across the Atlantic. But the deeds they did shook Europe to its foundations, though their full effect was not to be felt till the recoil of them came back in the third generation from New England to France.

For the time, France handed herself over to the Jesuits, who now, a hundred and fifty years after their first foundation, had become a corrupt and mischievous conspiracy against the progress of Europe. Five years after Corneille's death, the wise edict of Nantes, giving toleration to the Catholics, was revoked. The last thirty

years of Louis XIV.'s life were years of despotism, spiritual and temporal, at home, and of recklessly aggressive and iniquitous attempts to disturb the balance of power in Europe for the advantages of France.

But when Louis XIV. died, in 1715, Voltaire was twenty years old. And very soon there began the series of assaults upon the established Church and Creed of France which gave the eighteenth century its title of the century of Voltaire. Voltaire began by popularizing the mathematical philosophy of Newton, which he thus raised to the rank of a political event. He then put into simple, idiomatic French the destructive reasoning on moral and religious subjects of the thinkers of the previous century—from Descartes to Spinoza. Having such wit, such power of lucid expression and copious illustration, as have never been equalled, his influence as a propagandist of free-thought on a society groaning under the intolerable bondage of the French State Church was wide, rapid, and irresistible. It is no wonder that he should have been regarded during his life, and for many years after his death, as the chief representative of the eighteenth century, the second being Rousseau, whose influence, summed up in his *Social Contract*, was as nihilistic in politics as Voltaire's was in religion.

Carlyle, in his *Frederic*, thoroughly endorses this view. For him, Voltaire is the great intellect of the century. So far as I know, the first decisive attempt to dethrone Voltaire from his high throne, and to relegate him to a secondary place, was made when Auguste Comte examined the intellectual movement that prepared the way for the French Revolution. He admired Voltaire, and fully appreciated the amazing combination of faculties of expression and clear utterance with restless activity which

made him so unrivalled a propagandist. But there was work going on apart from the process of mere destruction, a work of building up the new fabric of society on a purely human foundation, with the materials which commerce, industry, science, and art had been long accumulating. In this far more difficult work of rebuilding Voltaire took but little part. It was the work of men of less widespread notoriety—men like Montesquieu, Vico, Beccaria, Adam Smith, Turgot. But the greatest of all were David Hume and Denis Diderot.

Diderot was the son of a working cutler in the small town of Langres, born 1713. He was brought up for a time under the Jesuits, like Descartes, like Corneille, like D'Alembert, and so many other leading thinkers of France. He had a boyish desire to be a priest, which soon passed off. He made his way, like other adventurous lads with brains, to Paris. There his true vocation speedily showed itself. Adopting no profession, and living from hand to mouth in a Bohemian way, he joined the band of thinkers who were actively engaged in attacking the old order of belief and of life, and in bringing about the new order, so far as they knew how, and had any organic principles to build with. He joined them, and rapidly became their head, and also their heart. For his was a nature richly endowed not merely with keen perception, capacity for wide generalization, and for deductive reasoning—he was endowed to the full as richly with every generous emotion. Never was there a man of letters so free from mean jealousy or blinding vanity. Far as the poles from any purpose of his was to claim property in any thought or discovery of his own. All that came to him he gave richly, and without hope of return. Gay, genial, bright, social, his energies were as unflagging as those of the

sternest ascetic ; and they were fixed from first to last on one object—the illumination and progress of mankind. When fame came to him at last, it turned him aside no whit. A great monarch courted him—not he her—and he was as independent and as simple and frank with her as with the first man or woman he might meet in Paris.

He often told me, says one of his friends, that he never found the hours pass slowly in the company of a peasant, or a cobbler, or any handicraftsman, but that he many a time found them pass slowly enough in the society of a courtier. "For of the one," he said, "one can always ask about useful and necessary things ; but the other is mostly, so far as anything useful is concerned, empty and void." *

There are aspects of his life that are quite impossible to defend, though they need that those who judge them should take for their standard the life of Paris or London in the eighteenth, and not the nineteenth, century. His relations with his wife, a woman of fretful, uncongenial temper, to whom he was not faithful, and with Mademoiselle Volland, a woman of many noble and admirable qualities, to whom he remained fervently attached till her death, in 1774, form a story which it is painful to read ; though, contrasted with the life of the court, and of the great nobles against which not a single priest or bishop protested, the life of Diderot was purity itself. But, as we shall see presently, the revolutionary philosophy of Diderot offered no sufficient guarantee for the sanctity of the family tie.

But it is time to form a precise idea of Diderot's work. Some clear notion of it may be gained by looking briefly at the three treatises of Diderot which are placed in the Positivist Library.

* Morley, p. 316.

We have first the *Thoughts on the Interpretation of Nature*, which are connected, in the Library, with Descartes' work on *Method* and the *Novum Organum* of Bacon.

The principal thought in this treatise is the protest against the notion that mathematical reasoning from one or two fixed principles will enable you to explain the universe. Descartes had tried to do this, as Mr. Spencer has tried to do it in our own day. Diderot's treatise is really a refutation by anticipation of such attempts as Mr. Spencer's. Readers of Carlyle's *French Revolution* remember the scorn with which he talks of "Victorious Analysis;" and most readers pass that expression by unexplained. What he is jeering at is the ambitious and idle pretension of the mathematical and mechanical philosophers, who, because their algebra enabled them to calculate the path of the planets round the sun, supposed that by carrying this calculation a little further they would be able to explain the universe, or the operation of the human brain. Against all such pretensions Diderot protested as vehemently as either Bacon or Comte would have done. He saw clearly enough that the world was not like a steam engine or a clock of a more complicated kind, of which, when you once understood the principle of the expansion of vapours, or of the elasticity of springs, you would be thenceforth able to explain every part. The atmosphere of the time, full of revolt against the oppressive dogmas of the Churches, was all in favour of cut-and-dried *systems of nature*, those of Maupertius, d'Holbach and others, which were put forward as a substitute for the worn-out Catholic creed. In reality, there was but one of these which was justifiable—the attempt made in the previous century by Descartes. That attempt did its work, by showing the impossibility inherent in all such attempts. Those of

d'Holbach, those of Mr. Herbert Spencer in our own time, are prejudged at their birth.

All this Diderot saw clearly. He was far on the road that led from the Objective Synthesis to the Subjective Synthesis: hard words, but which are easily made clear to the humblest mind. There is the view of the world in which it is supposed to lie before you like an object which can be apprehended, grasped, understood, as a whole. That is the *Objective Synthesis*, which ambitious thinkers have attempted, and which wise thinkers have abandoned; that is the "Victorious Analysis," against which Carlyle levelled his sarcasms; that is the "idol of the cave" which Bacon knocked down; that is the tower of Babel, which Diderot advised men to leave off trying to build; that is the pride of intellect which emancipates itself from all social purposes, and seeks to build a monument to its own glorification. And from this vain attempt to explain the Universe we pass to the only true synthesis, the human or subjective synthesis, in which the facts of science are grouped round man as the centre, and arranged in the order of their closer or more distant connection with the life of Humanity. But though Diderot could see the vanity of the first of these two attempts, he could not see clearly the true nature of the second. Had he lived a few years longer, he would have witnessed the distinct growth of two sciences as distinct from physics, as physics is from mathematics, the sciences, namely, of Chemistry and of Biology. That would have added new force to his conviction that the facts of the Universe were not to be explained by calculations derived from a single principle. And the man was living, and known to Diderot, whose work* gave the immediate

* I refer to Condorcet's *Progress of the Human Mind*.

stimulus to the discovery of the final science of Sociology, round which all the other sciences could henceforth be grouped; thus, forming the only possible synthesis, the human or subjective synthesis. But this it was not possible for Diderot clearly to foresee. He worked vigorously, instinctively, but blindly in this direction; but he could not distinctly see the goal. And meantime the void was filled in the only way that was possible for the moment: by the old stop-gap of Nature. D'Holbach's *System of Nature* was then hailed as a sort of gospel. It was a systematic and most vigorous onslaught on the whole system of belief and social institutions of the time. It was a direct repudiation of the Past. "The woes of the human race were increased," he said, "by the religions, the governments, the opinions, in a word by all the institutions that man had been led to adopt with the view of ameliorating his lot." From this they were to return to Nature. But it never seemed to occur to him that these very institutions were one of the productions of Nature. Man himself being one of the products of Nature, all the works of man were products of Nature too. But it was the Philosophy of Revolt: the direct philosophy of the French Republic. Diderot did not adopt this philosophy, though he could not substitute a better. Nevertheless, he was working towards a better.

Let us pass to the second of the works mentioned in the Library: the *Letters on the Blind*.

This is really a very careful and profound study, put in most luminous and familiar words, of the way in which man's whole mental and moral framework is coloured by his physical organization: and especially by the organization of his senses. How far could our whole conception of the world be altered if the human race were without

the organ of sight? is one of the questions he asks. He explains that the moral instinct of modesty would take, for instance, in such a case, a wholly different form. Again, that current conceptions of religion would be widely different. The proof so commonly insisted upon of the existence of God, derived from the beauty and perfection of the works of Nature, would have no meaning for a blind man. He introduces with wonderful dramatic skill the blind professor of mathematics, Saunderson, of Cambridge, who was a known sceptic, and an orthodox clergyman, who visited him on his death-bed. The clergyman, Mr. Holmes, pressed upon him the wonderful marvels of Nature as a proof of the existence of God. "Ah, my dear sir," replied the third philosopher, "let us leave off talking of this beautiful spectacle; it was not made for me. I have been condemned to pass my whole life in darkness; and you tell me of marvels which I don't understand, and which are only convincing to you and to those like you who have eyes. If you want me to believe in God, you must let me touch Him." "Sir," said the clergyman with some skill, "apply your hands to your own body, and you will find Deity in the wonderful mechanism of your organs." "Mr. Holmes," replied Saunderson, "I must observe that all this is not so admirable for me as for you. But supposing the animal mechanism to be as perfect as you say, and I am willing to believe, for you are a straightforward man, incapable of imposition, what has all this to do with a Being of Supreme Intelligence?" *

Here then, a hundred years before Darwin published his *Origin of Species*, we have the great theological principle of final causes, and Divine design in creation,

* Cf. Morley's *Diderot*, vol. i. pp. 93 ff.

antagonized by the fertile and positive principle of the conditions of existence and the survival of the fittest. What use Comte made of this principle in discussing the problem of man's first appearance on the earth is well known to all students of his philosophy. In France and in other parts of Europe the assault made by Diderot and his fellows on the argument of design and the proof of an all-wise Creator was decisive. The great naturalist Lamarck followed in the next generation, and put forward a systematic scheme of development of animal life from the simplest forms up to the higher animals and man. In England there ensued the great aristocratic struggle against the Revolution, in which the Church was called in as the ally of the State. Paley and his *Natural Theology* introduced a new dogma into the English orthodox creed. Under pain of being utterly tabooed no doctor or student of anatomy dared to criticize any part of the animal framework—obvious as its imperfections were to common sense. Not till the middle of the nineteenth century did the publication of Darwin's books bring us into line with the other nations of Europe in these matters.

The treatise of Diderot contains many other very profound observations on that part of biological science which deals with the senses, and with perception as resulting from the combined effects of the senses of sight and of touch. Diderot was not the man to content himself with loose literary generalities. He was a genuine and patient student of science; although his range was as wide as human nature itself, and his function was rather that of an architect than a bricklayer.

I have yet to notice two other aspects of his work. He spent much time in the study of art of every kind.

His criticism of the pictures exhibited annually in Paris, mediocre though the paintings were in almost all cases, contain very profound thoughts on the nature of art and its social function. He had the soul of a great poet, keenly alive to everything that touched man's life, sensitive and responsive throughout the whole scale of emotion. The old saying of Terence was truer of him perhaps than of any other man, unless it is Shakespeare: "He was a man, and everything in man's life was near to him."

His treatise on Beauty is the third work of his that has a place in our library. It is, in fact, the article on that subject which he wrote for the *Encyclopædia*. I cannot, in the short space allotted to me, do justice to his analysis. He seeks for the common property in all that we speak of as beautiful—a human countenance, a building, a poem, a picture, an industrial product, etc. He finds it in the quality of calling up within us the perception of relations. For instance, he takes the well-known word in the Horatius of Corneille, when the old father first hears the news that Horatius' two brothers are slain, and that he is flying from his three enemies. While he is bitterly reproaching his son, his daughter says to him, "But what would you have one man do against three?" "Die!" says the stern old veteran. The word electrifies the audience. Diderot takes this word. Die! There is nothing in it remarkable; it is neither beautiful nor ugly. When you know that it is an answer given to a question as to what a man should do in battle, your interest begins to be roused. "Then when I add that the issue of the battle in this case is the safety and honour of the country; that the man who is fighting is the son of him who gives this answer to the question; that he is the only son left to him; that this son is matched against three enemies, who have already killed his two

brothers; that the old man is speaking to his daughter; that he is a Roman citizen—then the word 'Die!' which at first was neither beautiful nor ugly, grows more and more beautiful as I unfold its relations to the circumstances in which it was spoken, and is seen at last to be sublime."

I have mentioned the word "Encyclopædia," and I must close this tribute to Diderot's memory with a few words on this great work which occupied so many years of his life, and the publication of which was a long battle with very arduous difficulties.

Eager to build up some structure to replace, if only provisionally, the hopelessly obsolete synthesis of Catholicism, and yet without any binding principle round which the new and ever-growing mass of positive knowledge could be grouped, Diderot conceived the wise and practical scheme of a dictionary of useful knowledge, which would enable himself and his fellow-workers to put forward their views on human life in as systematic a way as the case admitted. Comte has always admired the phrase uttered by a statesman amidst the turmoil of the revolution of 1848: "*Faire de l'ordre avec du désordre*" (Make the best order you can with disorderly elements). Diderot was in the position that neither God nor even the metaphysical entity Nature could be adopted by him as a central principle, and yet he could not grasp the only permanent principle of unity—Humanity. Yet towards this he was blindly groping his way. And the principle of practical, social utility, which is what he really took for his guide,* served him well in the choice of his subjects. And, at any rate, this great enterprise served as a rallying point to

* "A society of educated men, linked together by the general interest of the human race and by mutual friendship"—this is how he defines his purpose. The work is dedicated, "*A la posterité, à l'être qui ne meurt point!*"

bring the band of pioneers together. Such a brilliant troop of fighters in the cause of Progress has never been seen. Among the contributors were Montesquieu, Voltaire, Buffon, Rousseau, Marmontel, Quesnai, Holbach, Du Brosses, Haller, Turgot, Condorcet, and, finally, the great mathematician, D'Alembert. The first volume was published in 1751. At the second volume the clergy induced the State to stop the publication. It began again in 1753, and went on amidst the execrations of the Church till 1759, when D'Alembert's article on Geneva, contrasting the tolerant spirit of the Unitarian clergy of that society with the cruel obscurantism of the French clergy, brought a second Government order of suppression. Then D'Alembert, weary of the struggle, left the work, and for thirteen years Diderot went on alone.

It would be a great mistake to suppose that this Encyclopædia was a systematic series of attacks on Christianity. These men had something else and something better to do. They showed, indeed, in a very unmistakable way, their own scepticism and indifference to mystical and theological beliefs ; but the real force of their attack lay in their representation of the great mass of secular and useful knowledge as something which made this earthly life worth the living. What is specially noteworthy is the detailed attention paid to the work of artisans in every branch of industry. It was the first recognition of the dignity of labour. And this is due essentially to Diderot. He spent hours and days throughout this part of his life in workshops, patiently learning for himself the details of machinery of all sorts, getting the machine taken to pieces and put together for him, putting his own hand to it, and, as he said, doing bad work himself that he might teach good work to others.

Comte praises the admirable wisdom of Diderot in planning this scheme as a rallying point for all those who were engaged in the common work of emancipating their fellow-men from theological bondage, and in making this life interesting and precious. Had any definite set of articles of philosophical belief been proposed for adoption, Comte remarks, intellectual differences, envenomed by envious rivalry, would have hampered the success of the undertaking, as similar attempts brought discredit on Protestantism. But Diderot interposed with his happy expedient of the *Encyclopædia*, which formed a provisional, though artificial, rallying point for the most divergent efforts, without requiring the sacrifice of independence. Thus this man of incoherent speculations gained the outward appearance of a sort of philosophical system. And the time spent on the undertaking was long enough for the really important contributions to be thoroughly elaborated.* Elsewhere he speaks of the *Encyclopædia* as a sort of workshop, in which the political school might co-operate with the philosophical school. This concentration of purpose constantly reminded the writers of their organic purpose in the midst of their critical labours, by bringing back their thoughts to the construction of a complete synthesis.

I conclude this commemoration by reading to you Comte's appreciation of this great constructive school of thinkers, the pioneers of Positivism, contrasted by him with the mere demolishers of the past.

"This grand school, the sole representative of the eighteenth century towards both the future and the past, binds it to the seventeenth century in the person of Fontenelle, to the nineteenth in that of Condorcet. Its special organs naturally group themselves

* *Phil. Pos.* v. 520.

round two types of the first order, Diderot and Frederic: the former the most encyclopædic intellect that had arisen since Aristotle, the latter a political genius more comparable than any other to Cæsar and Charlemagne. But these two essential representatives of this phase of transition had not equal opportunities of showing their worth. The adjustment of circumstances to capacity was widely different in the two cases. The dictator offers the best of modern statesmanship, conciliating, as Hobbes wished, power with freedom. But the philosopher born for building-up was forced to take part in the work of destruction, which alone was thus possible, without being even able to call his highest faculties into action. Nevertheless, Positivism, always enabling us to disentangle individual worth from the complications of historical position, will soon secure for the principal genius of the eighteenth century the supremacy which belongs to him, just compensation for the fatalities which thwarted his life by outward obstacles and filled it with bitterness. Round these two types, intimately connected, though never personally associated, will be grouped the men who were the chief glory of those days, and who could never find a place in either of the secondary schools—Hume, D'Alembert, Montesquieu, Buffon, George Leroy, and Turgot."

It is encouraging to us to remember to-night that this prophecy has at last come true, and that the first systematic recognition of Diderot by his countrymen as the representative genius of the eighteenth century has been organized and carried out in the presence of some of the leading statesmen of France by the successor of Auguste Comte, Pierre Laffitte.

A striking statue of Diderot stands now near the house where he spent his life. It does justice to the noble head, to the animated gesture, to the keen, vivid sensibility and sympathy to everything human. And in the brow and eye there is a prophetic look, as though to a distant future, in which man should be free and worthy of his freedom. Towards that future he is one of those who have led the way.

THE DAY OF ALL THE DEAD *

THE year that comes to its end to-night will be remembered in the world's history for two events of supreme importance: the establishment of Japan as one of the Great Powers, and the awakening of Russia from a condition of torpid despotism to constitutional freedom. Each of these events has already reacted, and will for a long time continue to react, upon opinion throughout the world in many ways. Let us examine the first of them.

During the last three centuries the conviction has been firmly established that the Eastern nations of the world were subordinate to the Western; and that the superiority of the West was connected, in some way, not always very clearly defined, with its acceptance of Christianity. In former times such a belief would have been impossible. The rivalry of Christianity with Islam endured for many centuries, until, a century after the capture of Constantinople by the Turks, the long strife was finally settled at the battle of Lepanto. Since then the leading Powers of the world have been exclusively Christian; the non-Christian East has been, in one way or other, subordinate to the Christian West; has been understood to stand on a lower level of civilization and power.

* An Address delivered in Essex Hall, on December 31, 1905. (Reprinted from the *Positivist Review* of April, 1906, by kind permission of the editor.)

The truth underlying this conception was, not that the West was made strong by Christianity, but that it inherited from the Greco-German world the germs of science and industry, which, when developed in the sixteenth and succeeding centuries, became the source of modern civilization. Through the Arabs, Western Europe received the results of Greek astronomy. Roman imperialism gave birth to mediæval feudalism, and the replacement of slavery by serfage, and, ultimately, by free labour. The inventions of the compass, of gunpowder, of printing, the geographical discoveries of Vasco da Gama and Columbus, and, finally, the tremendous impulse to thought given by Copernicus and Galileo, opened to the world a new era, which, as we can now see, was destined to bring about the unification of the nation under the religion of Humanity.

The first fruit of this new era has been the uplifting of Japan to the level of the Western nations. The process seemed to superficial onlookers unexpected and sudden. In reality its foundation had been long prepared and deeply laid. An ancient and coherent civilization, built up from units of great individual energy, strengthened by long periods of internal struggle, in which a type of character had been developed, recalling the noblest examples of our own mediæval chivalry, was ready to receive the results of Western science and industry, without sacrifice of its own original powers. Japan adopted our law, our medicine, our marvellous mechanical appliances, our methods of self-defence by land and sea. She never for a moment abandoned her resolution to uphold the independence of her tribunals, and to rid herself at the earliest moment of the incubus of foreign law-courts in her cities, which hitherto had been the symbol of Western ascendancy in Eastern countries.

What is the religion of Japan? If we look into it closely, we see that one constituent of it, the most ancient, and, perhaps, not the least potent, is a development of the simple nature worship and ancestor worship common to all primitive nations. It has much in common with the religion of China, with the religion of primitive Rome, with the religion of ancient Israel, before the establishment of monotheocracy. Shinto, thus it is called, is a genuine product of Japanese soil. Its Pantheon is crowded with a host of deities: every stream, every mountain, every tree, has its god or goddess: every hero, every ancestor, have their places in the Shinto theocracy. Its creed may be summed up in two sentences: belief in the continued existence, real though shadowy, of the dead; and belief in the sacred origin and character of the occupant of the throne.

If we would see this religion in action, I know no better way than to quote from the description given by the correspondent of the *Standard* of the ceremonial that took place on June 20, 1904, at the funeral service performed in the presence of the First Japanese Army in memory of those who fell in the battles fought at the crossing of the Yalu River:—

The priest stood on the mountain side facing the multitude. In his uplifted hand was a pine branch hung with strips of white paper, emblems of the soul's purity. Thrice the branch swept the air above the bowed heads in the plain below. The simplicity of this act of purification, the silence of the vast congregation, the beauty of the scene, all combined to fill with awe and reverence the alien spectator as well as the native worshipper. Behind the priest, on a green mound, was the sanctuary, an oblong enclosure hung with symbolic banners, white, blue, yellow, black, and red. The High Priest drew near to the altar, and, bowing before it, took from his breast a scroll, from which he recited these words:

"I, Hirokage Shimizu, Shinto priest, reverently speak to the souls of Lieutenant Jiro Takuma and other officers and soldiers who died in the battle of the Yalu and elsewhere, inviting them to approach the altar which we have erected at the foot of Mount Teisen, beyond the walls of Feng-huang-cheng. When friendly ties were broken, and we came to the Russians with weapons in our hands, you marched to the front with the First Army, knowing that this was the hour of sacrifice and duty. Bravely did you endure hardship and privation on sea and land, on mountain and in valley. On the first day in May you came to the Yalu and fought with admirable courage amid hail of bullet and flash of bayonet. Some of you did excellent service in the work of road and bridge building and transport. All of you helped to achieve that brilliant victory which has added lustre to the Empire and renown to the army. Here we would willingly tell again the story of that battle and talk over the future; but, alas, you are separated from us by the dark veil of death. We cannot see your brave faces, nor hear your cheerful voices. Deeply do we feel this separation. More than worldly honour have you won. Your spirits will be for ever with the gods who guard the Empire, and your name will be cherished as an example of loyalty. Our General and we desire to pay our respects to your loyal souls by this memorial service, and by offerings reverently laid upon the altar."

It would seem, then, that men, not isolated heroes only of surpassing worth, but men in the mass, men by the thousand and the million, may be roused to heroic endurance and absolute self-sacrifice quite apart from any transcendent prospects of a personal future inspired by supernatural belief. It has long been matter of common knowledge that the Hebrews, till a very late period of their history, had no belief in a future state. The three hundred who fell with Leonidas at Thermopylæ were assuredly stirred to their immortal deed by something more potent than the worship of Zeus, or Artemis, or Hera. The poet's epitaph on their grave was just this one simple word: "Stranger, tell the Lacedemonians that we lie here

in obedience to their commands." "Winning inextinguishable fame for their loved fatherland," he says elsewhere, "they clad themselves with the dark cloud of death. They died, but they are not dead. Valour leads them up with glory from the house of Hades." The more closely we look into it the more clearly we shall see that what has brought men to their highest level has been the bond that united man with man. Trace history throughout and we shall find that this is true. Pass from Greece to Rome, thence to the history of the Crusades, and onwards to the history of the Revolution. We shall see that, as the elder Pliny said, where man helps man there is God. There is the force that raises man above himself and lifts him to the highest level of manhood.

We have been led to these thoughts by considering the first of the two great events of the last year—the outcome of Japanese valour and Japanese religion, resulting in the admission of a new member into the commonalty of great nations. Let us turn now to the second: the struggle of Russia to awake from the torpor of despotic autocracy, and to take her place among free self-governing commonwealths. One or two prefatory words, by way of briefly surveying the problem. Russia is a new country; new by comparison with Western Europe, new by comparison with the two established governments of the Far East—China and Japan. She did not pass through the renovating discipline of Roman conquest. She was left outside the spiritual dominion of the mediæval Popes. Imagine Latin and Teutonic Europe, between the fifth and twelfth centuries, deprived of the moral discipline of men like Benedict, Bede, Boniface, Alfred, Charlemagne, Hildebrand, and St. Bernard, and we realize what the Slavonic world has been through all those centuries. Its religion

was the second-rate form of Christianity that was left in England when Henry VIII. had made himself Head of the Church. The separation of spiritual from temporal power, of Church from State, is the first condition of freedom. That freedom Russia has never possessed. The deposition of the Procurator of the Holy Synod from his power to suppress the slightest sign of spiritual independence in the remotest village of the empire is the surest and most signal proof of the momentous importance of the crisis that is now being decided. "Through much tribulation," it was said of old, "must ye enter the kingdom." And fearful is the tribulation through which Russia is now passing, and has yet to pass. We can but stand by and look on as the struggle advances, and the smoke of battle becomes darker and more dense; confident that a highly gifted race which has been slowly assimilating the science and thought of the West, which has already produced great men of science, great thinkers, great artists, great musicians, will win through to the daylight and to the blessings of peace. Her bravest blood during these past years has been shed like water; but it will not have fallen to the ground in vain. Her dead will sanctify and ennoble the living and the yet unborn.

We meet to-night to celebrate the Festival of the Dead; the dead of every degree and rank and worth. Other days are set apart for the commemoration of saints and heroes, those who are in a special sense the types and representatives of Humanity—the great poets, the great thinkers, the great rulers, the great spiritual guides. We are not thinking to-night so much of Shakespeare or of Aristotle, or of Cæsar and Cromwell, of St. Paul, of St. Augustine and St. Francis, of Moses, Mahomet, Confucius, and the marvellous Indian Prince

who regenerated the Asiatic world, as of the vast mass of men who have worked and toiled without fame or distinction, and the fruit of whose labours we inherit and enjoy. We think of the millions of workmen who, from the days of the Romans to the present time, made our roads, cleared our forests, drained our marsh lands, built and rebuilt our towns and villages, from century to century, of the women who bore and nursed their children, and ministered to their daily wants, kept alive the mother-tongue, handed on traditions, customs, legends, rules of life. These "fear no more the heat of the sun, nor the furious winter's rages; they their earthly task have done; home have gone and ta'en their wages." The kindly earth holds them. Yet the payment of wages does not settle the matter, does not wind up the account. Their work, or the fruit of their work, remains; and is gathered in by us who follow them. Such is the vast assemblage of the Dead with whom we place ourselves in communion to-night. Let me quote Dr. Ingram's beautiful words—

"Not only those by household memories
Linked with our lives, for whom, on bended knees,
Daily we yearn, and tears not seldom shed—
Not only the great spirits who have led
Man's upward march to nobler destinies,
Whose record in Fame's golden book is read—
We reverence to-day; not only these,
But all, in whatsoever age or clime
(Albeit the names of most the un pitying Hours
Have hid for ever in the abyss of time),
Who, faithful, patient, helpful, strove to be,
And so, while worshipping imagined Powers,
True service did, Humanity! to thee."

The Festival of the Dead, supplemented in every fourth year by the Festival of Noble Women, terminates the list of eighty-one festivals which constitute Auguste Comte's

ideal picture of the public worship of Humanity. It may be well to look a little more closely into the arrangement of these festivals; frankly admitting that the realization of the scheme is reserved for a distant future. Yet regarded as an Utopia it will be found to throw light on the structure and the life of the great Organism of which each of us is a member. The festivals fall into three groups. The first group, occupying the first six of the thirteen lunar months, that is to say twenty-four weeks, deals with the fundamental bonds of society, that is, with the elementary social relations. The year begins with the greatest of all festivals, that which presents the idealization of our highest hopes and aspirations—the Festival of Humanity. When our numbers permit, and this may be sooner than we think, this day will probably be the first to offer an adequate combination of the resources of music and poetry with the synthetic thoughts that naturally belong to the greatest of our festivals.

The four Sundays of the first month are given to the various degrees of social union. The first to the religious bond, independent of political ties. The faiths of Christianity, Islam, Buddhism, unite many nations, which, politically, are wide apart and often hostile, by the tie of a common Church. Next in order comes the territory which unites small States by the memories of the larger political aggregate to which they once belonged: those memories being strengthened in most cases by the bond of a common language. The memory of a common origin and history and the possession of a common language is a strong bond of union for England with English Colonies and with the once hostile commonwealth of the United States. When Italy becomes a federation of small republics, these will still be knit together by the language

of Dante. On the third Sunday in this month the State, properly so called, will be commemorated: the great historical city—as, for instance, Amsterdam, Copenhagen, Edinburgh, Rouen, Bordeaux, Florence, with the smaller towns and territory belonging to each; calling forth all the historic memories and all the political energy and social enthusiasm so keenly felt where prominent citizens are well known to all their fellows, and where the deadening lust of conquest and empire is powerless to penetrate. Finally, the fourth Sunday of the month is given to the humblest form of social union, that of the village or township: in which each member of the community is brought into the close fellowship of neighbourhood.

The festivals of the next five months are suggested by the intimate ties of family life—the union of husband and wife, the relation of parents to children, of children to parents, the bonds of brotherhood and sisterhood, the bond of master and servant. In the third chapter of the second volume of his *Positive Polity*, Comte dwells in detail on the great principle that family life is the preparatory school of ethics: the spontaneous source of our moral education. In no other department of thought does he diverge more completely from the current views of most social reformers, who are for taking education more and more out of the hands of parents and transferring it to the community. But Society, Comte tells us, is not made up of individuals. It is made up of families.

The family is the natural transition between pure personality and true sociability. The affections which it calls into play are not without alloy. They have, always more or less marked, an element of Self, and from this they derive their peculiar energy. The educational work of the family begins with the forced submission of the

infant at birth. This grows to respect and veneration for parents. On this grows the affections of brotherhood and sisterhood; and, at last, come the voluntary ties of marriage and of children. Looked at politically, we may speak of the family as the smallest of political societies, consisting essentially of the couple by which it is founded; but extended by the filial, fraternal, and domestic ties. From it we derive our best and surest insight into human nature. Speaking generally, the members of our family are the only beings whom we ever learn fully to know. And this, even though our judgment be sometimes partial. It is said that love is often very blind. But we should remember that hate is blind invariably, and with more baneful consequences. We may admit that family life is exposed to the danger of promoting an aggregate selfishness. But this is a danger which attaches to all communities less than Humanity, whether large or small. A great part of history is occupied by fierce struggles of opposing patriotisms; yet who will say that patriotism is ignoble? We must face this danger as well as we can. But before everything we must arouse the instincts of sympathy from their original torpor, whatever may be the danger of their receiving at one time or other a mischievous bias.

We must bear in mind that Comte looked forward to certain important changes in family life, which would bring it into fuller accordance with social needs. One of these is the frank and full recognition of domestic service as an element of the family. This clashes sharply with the modern revolutionary temper. If we wish to rise above the habitual disregard of such service as degrading, we have to go back to the Middle Age, and think of the motto, *Ich Dien*, so proudly adopted by the Prince of

Wales in the fourteenth century. Another change was Comte's enlarged view of inheritance. To the bulk of a rich man's fortune his children, he considered, had no necessary claim. Capital is a trust to be handed down to those most fit to preserve and increase it; and the most fit will often be found outside the range of blood relationship. Adoption of a capable successor will often supersede inheritance by the natural tie.

On the sound constitution of the family depend the health and vigour of the community. The festivals of five months bring into prominence all the phases of private life that are treated, wisely or unwisely, in the modern novel.

We pass, then, in the twenty-fifth week of the year, to the review of the past phases in the history of Humanity, which have prepared the way to her present and future state. These phases connect themselves with the three successive stages of belief: Fetichism, Polytheism, Monotheism.

Here we note at once that Fetichism, for the first time, receives due honour as the primal phase in this great story; honour which could not be paid in the Calendar commemorative of great men, for the great men of Fetichism have passed away from us without a sign. Four festivals are celebrated in the month of Fetichism, marking four essential steps in human history. When they were taken we know not: we can but note their fundamental importance. The taming of animals, the invention of fire, the worship of the Sun, as the prime regulator of the Seasons and of social institutions, and the use of Iron for weapons of war and for implements of industry.

Fetichism was followed by Polytheism: and in the Polytheistic month we celebrate, first, its conservative

stage, the great theocracies of Egypt, Babylonia, India, Peru, not forgetting its fundamental institution of Caste, the great school of apprenticeship and discipline in the arts of life; and, next, the progressive polytheism of Greece and Rome. To Greece two weeks are devoted. In the first honour is paid to the three chief names in poetry and art—Homer, Æschylus, and Phidias. In the second week, the founders of philosophy are celebrated—Thales, Pythagoras, Aristotle, Archimedes, Hippocrates, Apollonius, and Hipparchus. And the great struggle, without which these men could never have been, is summed up in the word—Salamis. Three names—Scipio, Cæsar, Trajan, suffice to immortalize the social achievements of Rome in government and law.

Of the month of Monotheism, the first week is given to Judaic theocracy, represented in the three types of Abraham, Moses, and Solomon; the second week to Catholicism. St. Paul, its founder, is followed by Charlemagne, Alfred, Hildebrand, Godfrey, and St. Bernard. The third week is that of Islam and its founder, special mention being made of the great battle that ended the military strife between Islam and its great rival—the battle in which Cervantes was a soldier. The last week is consecrated to the Western revolution in its entirety, the period at once organic and critical in which political anarchy went side by side with reconstruction, bringing out the immediate elements of the final system, both in the spiritual and temporal order. Dante, Descartes, and Frederic, are taken as the types of this revolutionary and reconstructive movement.

The festivals of the last four of the thirteen months display Humanity as a living and acting force, as a superintending Providence, as our shelter and protectress against

the dangers and fatalities of life. Of Positive Religion Love is the Principle. With that we begin. A mother's love is the surrounding atmosphere of our early life: the love of wife, sister, daughter, follows: and these implant the memories which keep alive the hopes and the affections which save us from moral death. Love is not limited "to its more vehement and selfish forms, the desire of youth for beauty, the consuming love of the mother for the infant. It leads beyond these to the tranquil and purer manifestations of the spirit, the love of a father for a son, of a friend for a friend; the love which can light up a face upon the edge of the dark river, and can smile in the very throes of pain." Such love is "the only thing which holds out a tender defiance against change and suffering and death. If we desire and endeavour not to sin against love, not to nourish hate or strife, to hold out the hand again and again to any message of sympathy or trust, not to struggle for our own profit, not to reject tenderness, to believe in the good faith and the good will of men: we are then in the way. We may make mistakes, we may fail a thousand times; but the key of heaven is in our hands."* Of this all-protecting, all-providing love, woman is the source and centre. Who does not feel that when the time comes for disbanding armies and for uniting the diminished navies of the world into a single fleet for the police of the seas, that women will have taken a leading part in bringing that time near? In this tenth month special note will be taken of private meditation and prayer as the means of keeping alive the influences of Home by due recognition of those who have called out and strengthened the springs of character and moral life.

The eleventh month brings before us the intellectual

* The passages quoted are from the Upton Letters.

providence of Humanity. In the preceding month we deal with the affections by which action is prompted. In this month we are encouraged to think, in order to act wisely. A special Festival of Art is placed here; and also a Festival of Science. Passion for ideal beauty, strenuous search for the deepest and highest truth will be fostered by the Religion of Humanity, and animated to new life, not left as heretofore to casual and isolated efforts. Yet these things, precious as they are, will be held subordinate to the training of the young lives of each generation and to the guidance of grown men and women in the intricate problems and the new forms of social struggle which each century is sure to bring. Intellectual energy, like mechanical energy, is in constant risk of dissipation. Waste of it is always going on; and yet of all the treasures that Humanity has at her disposal it is the most important to economize. There is none too much of it. Our educating providence will guard us against the ever-recurring temptation to indulge in the discussion of insoluble problems, the spinning of endless conjectures as to the origin of matter, as to space of four dimensions, as to the abstract rights of man, as to the immortality of the soul, and will concentrate our thought on the essential task of making private and public life more perfect. During this month, the most ancient form of spiritual power, that which is exercised by the old men of the primitive tribe, will be specially celebrated.

In the twelfth month the holders of capital will be seen in their true place as Captains of Industry. To realize the providential character of their great social function, we have only to call to mind the disasters following on the absence of wisdom in the management of capital. When avarice or mad ambition drives the capitalist to rash and

foolhardy adventures, ending in chaos, what shipwreck of happiness to millions, what diffusion of universal mistrust, what floodgates of ill-will unfastened ! Within due measure capital must be concentrated, and there must be personal responsibility for its use. To imagine that complicated operations in the financial world (and on this all other industrial operations depend) can be conducted by casual committees chosen by an ignorant democracy, is one of the wildest hallucinations that ever deluded mankind.

And, finally, the thirteenth and last month of the Positivist year brings before us the dependence of each one of us on the entire assemblage of our fellow-citizens. Here, again, what we owe to those who work faithfully is brought home to us by the few who are false to their trust. An uncemented drain-pipe, letting fever into a household ; a plate on a railway loosely laid ; a signal missed or misinterpreted ; a safety lamp in a coal mine neglected ; a girder in a bridge badly painted ; bad brickwork ; bad gasfitting ; bad plumbing—all such things pointing to the countless evils that follow when the sentinel of the industrial army is asleep at his post—do but emphasize the enormous preponderance of cases when he does not sleep ; when, by his care and faithful work, each one of us is saved from destruction and danger. Two festivals adorn this last of the months. First, the Festival of Inventors, many of them workmen, very few of them either philosophers or capitalists, who, possessing a few elements of theoretic knowledge, large practical experience, and vigorous imagination, devise new forms of applying and economizing force, and thus help mankind forward to the mastery of the world. Again, in the Festival of St. Francis, with whose followers may be joined in our thoughts the memory of the mendicant in Scott's

Antiquary, we have recognition of lives unfit for any special industrial office, debarred from the scientific eminence that would have given them spiritual ascendancy, yet capable, in their poverty and dependence, of exercising beneficent influence on those around them.

And then, at the end of all, we commemorate the Dead of all nations and tongues, of every place, every station—thinkers, rulers, workmen, mother, wife, child—all who have lived, have loved, have wrought, have left memories behind them, which, on this last night of the year, we call back to life. We do not judge: we leave that high function to others. We think of the two rivers in Dante's *Paradise*—the river of forgetfulness, the river of goodwill. We bathe in the first, which wipes all memories away. We drink of the second, which restores the happy memories, the remembrance of bright companionship, of kind and friendly service. These last friends we judge not; but it may be that we judge ourselves. We may think that we might have done more to make their lives happy; we might have uttered the forgiving word, for want of which it may be that a taint of bitterness stayed with them to the end. Irrevocable Death forbids this now. All the more shall we widen and strengthen our sympathies for the future, for those who remain with us still. Never let us forget that our chief purpose in holding communion with the Dead is that we may feel, think, and act more justly and more kindly towards the Living.

THE END



